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JOURNAL OF THE YOUNG LIBRARIANS ASSOCIATION is published yearly by YLA. It publishes scholarly articles, of general interest to LIS professionals, from all disciplines of library and information science. It's a real platform for publishing original contributions in the field of Library & Information Science.

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The Young Librarians Association [YLA] was founded in the year 2008. It was registered under the MP Society Registration Act 1973 in 23rd March 2010. Aim and objective to contribute to the professional and career development of all library personnel by conducting workshops and arranging programs. It also engage in library science education and the improvement in the training of libraries across India. To encourage and advocate for the interests of professionals and the all libraries and improvement in the status and conditions of services of librarians and promote the study, research, and dissemination of information relevant to Indian librarianship. Promotion of bibliographical study and research in library science. To foster cooperation and communication among the members of YLA, the Library community, other library organizations, and other associations. To support and protect intellectual freedom in the libraries. Affiliation of the State and other library association with Young Librarian Association and co-operation with International Organisation with same objectives. To acknowledge and honor the achievements of library personnel. Promotion of library movement and Improvement in library services in all its aspects in India. Publication of bulletins periodicals, books, etc. which will tend to the realization of the objectives of the Association. Establishment of libraries, documentation and information centres and assistance in their establishment and working promotion of appropriate library legislation in India. Promotion as well as formulation of standards, norms, guidelines, etc. for management of library and information systems and services; and carrying out all such other things those is incidental or conducive to the attainment of the above mentioned objectives.

JOURNAL OF THE
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Volume – 05 Year - 2012

Contents

Book-Review

Library and Information Science its relation to other disciplines (Subjects): An Interdisciplinary approach

Dr. Mohammed Yusuf*

The paper deals with various dimensions of library and information science i.e. concept, nature, aims & objectives, philosophy ,importance, and its relation to , other disciplines (i.e. Geography, Sociology, Management, Knowledge, Communication, Economics, Law, Information Technology, Commerce, Philosophy, Psychology, Political Science, Ethics, History, Education, Mathematics, Aesthetics etc.) and their impact Library and Information centres. These disciplines contributed in the form of principles, theories, laws, methods, techniques which are useful for library and information science education. The study suggest to includes the same in the curriculum of library education keeping in view philosophy disciplines and librarianship

Keywords: Library Science, Library and Information Science Education, Subjects, Library & Information Centres, Relationship.

1. Introduction

Change is the law of nature. Several changes i.e. technological, social, cultural, economical, geographical, political psychological, etc. are occurring which are affecting peoples and their organization. The disciplines developed with the passage of time in general particularly library and information science in 19th century onwards on account of these changes. The concept of library also changed from store house to service institution. The role of librarian also changed from custodian to information providers. Library and information centers are contributing in the growth and development of society/nation/ disciplines through performing various activities i.e. organization and management of knowledge, generation, conservation, preservation, transformation, dissemination, teaching, interpretation, assisting in research to the member of society without any distinction of caste color creed and sex and geographical boundaries directly/indirectly. Libraries are known by several connotations for their dynamic role such as '**Heart/Hub,** (Academic Library) of institutions, **Reservoir** of the nation (National Library), **People's Workshop** (Public Libraries) and **Generator of Power Station** (Special Library). In nut shell library and information centers are trying their efforts to make every citizen of the country powerful in terms of knowledge so that he/she makes contribute in growth and development of country in a rational way.

2. Purpose and objectives of the study

The purpose of the study is to highlight relationship of library and information science and other discipline and their impact on library& information centres.

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(i) To highlight the role of library education in changing society.
(ii) To describe concept of Library & Information Science Education
(iii) To assess level of relationship of library& information science with other disciplines.
(iv) To evaluate nature of relationship of library& information science with other disciplines.
(v) To find out contribution of other disciplines in terms of principles, theories, laws, methods and techniques, etc.
(vi) To trace out areas of impact/application of other disciplines on library and information centres.
(vii) To point out contribution of library and information centres in the growth and development of disciplines
(viii) To highlight contributions of library and information centres in the growth and development of society/nation.

3. Librarianship

Young Heartstill (1983) defined librarianship as "The profession concerned with application knowledge of media, and those principles and theories & technologies which contribute to the establishment, preservation, organization, and utilization of library materials and to the dissemination of information through media".

Librarianship is concerned acquisition, organizing, packaging of documents providing information to the users and applying various principles, methods, techniques, tools and putting them into use. In simple meaning, librarianship consist of library and information science education and their practical application in library and information certres

3.1 Library and Information Science

Prytherch, Ray (2005) Library and Information Science as "The study and practice of professional methods in the use and exploitation of information, whether from institutional base or for benefit of the users. An umbrella term used to cover term as library, librarianship, information science, information work".

3.2 Aims and Objectives of Library & Information Science

- To assess the information needs of the members of the society.
- To design curriculum keeping in view of need of the society.
- To prepare professionals for understanding the basic laws, canons, principles of library and information science.
- To make students proficient with advanced technique and methods used in storage and retrieval of information.
- To provide theoretical and practical training in application of IT.
- To provide theoretical and practical knowledge in organization and management of library and information centres
- To develop various type of skills among the professionals to achieve objectives of the organization in a better way.
- To provide training to the students regarding the research methodology including statistical techniques and their application in the discipline.

- To produce competent professionals who may face challenges in changing environment effectively and efficiently.

3.3 Scope of Library and Information Science

The scope of library and information science is very wide. . The curriculum of library and information science consist of various core , optional, supportive papers to provide theoretical as well as practical knowledge to the professional so that they may operate library and information centres effectively and efficiently in the challenging and changing society. Normally Library and Information Science schools included following papers in their curriculum ,The name of papers are as follows:-

Core papers : Library and Society, Management of Library and Information Centres, ,Reference and Information Sources and Services , Information Technology(Theory and Practice), Knowledge Organization(Theory and Practice) , Research methodology ,etc.

Optional Papers: Information and Sources in Natural/Social Science/ Arts and Humanities,

Academic Library (School, College ,University),Public, National, and Special Library System i.e. (Agricultural, Health, Engineering &Technological, Oriental, Media, legal, Industrial, , Special class of persons i.e. Physically handicapped, women, children and Islamic Studies Library System etc.

Supportive Courses: (Short Term Training Programmes) ie. Information Technology, Skills, Research methodology, Conservation and Preservation of Library Material, bibliometrics studies, Technical writing etc.

3.4 Philosophy of Library & Information Science

In simple meaning philosophy means to find out the reality. The philosophy of library education indicate that how to make profession effective and efficient in organization, dissemination, preservation, transformation and generation of knowledge. Due to interdisciplinary nature of research, expansion of knowledge , innovation of IT, increasing and complex demands of the users and various changes.

The philosophy of library education is based on five laws of library science propounded by Dr. S.R. Ranganathan. These laws are

(1) Books for use,
(2) Every Reader His book
(3) Every Book its Reader
(4) Save the Time of the Reader
(5) Library is a growing organism

.In addition to these laws the philosophy of library education is also affected by various principles, canons, and theories developed in the discipline. Thus, the philosophy of library education was instituted as towards the moral duty to read books, maximum use of books, maximum services to the readers, maximum efficiency and continuous growth in material, services, readers and the staff. Library education should support the philosophy of right book to the right reader at the right time and this can be achieved by acquisition of knowledge, intellectual discipline, sound judgment and operational skill of the librarian. In fact the

philosophy Disciplines including Library and Information Science is based on the answer of five questions. Why, What, Whom, Where and When.

I. Why (Reasons) Library& Information Science (Different Types of Need)
II. What (Content) Library& Information Science (Curriculum, Methods & Techniques)
III. Whom (Users) Library & Information Science (General or Specific)
IV. Where (Region) Library &Information Science (Broader or Narrower)
V. When (Period) Library& information Science (Ancient, Medieval ,Modern)

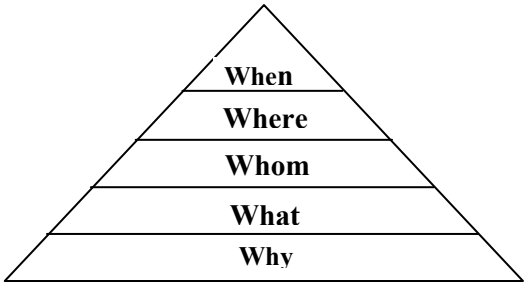

Fig. 1 Philosophy of Library and Information Science

4. Nature of Relationship

Due to expansion in knowledge and literature several disciplines (subjects) emerged, which are interdisciplinary in nature. Each subject has contributed in terms of principles, theories, laws, methods and techniques, which are applicable to, other subjects. These subjects have relation with library science and library & information centres. In my opinion, library science has two types of relations with other disciplines.

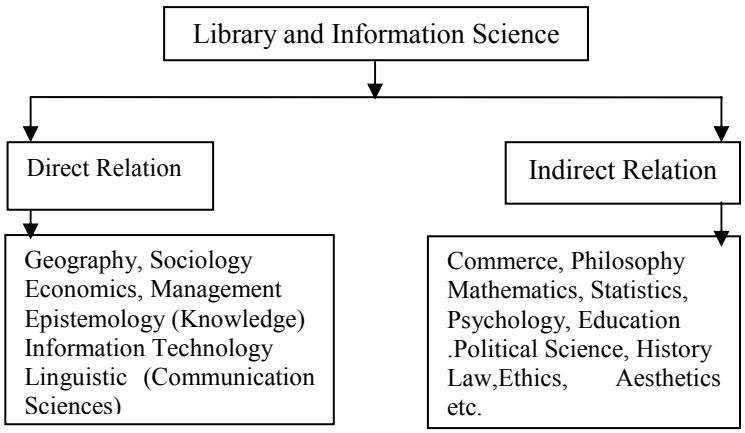

Fig.2 Nature of Relationship of LIS with other disciplines

4.1 Direct (Core) Relationship

The library science have direct relation with disciplines i.e. geography, sociology, economics, management, knowledge, Information Technology and communication sciences.

4.2 Indirect (Supportive) Relationship

The Library science which have indirect relation with other disciplines are law, mathematics, , philosophy, psychology, politics, ethics, aesthetics, education , history etc.

4.3 Level of Relationship

It has been observed that other disciplines have relationship with library science and information centres at three levels.

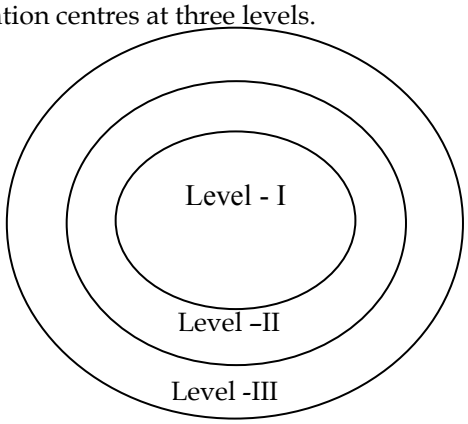

Fig.3 Level of Relationships of LIS to other disciplines

4.3.1 Level I : The discipline, which has **very close relation** with the library science, library & information centers, These disciplines are geography, sociology, economics, management, epistemology, and communication/languages.

4.3.2 Level II: The discipline which has **close relations** with library science, library & information centres. These subjects are law, information technology, commerce, mathematics, education. etc

4.3.3 Level III: These subjects have **slight relation** with library science, library & information centers, These subjects are philosophy, psychology, political science, ethics, aesthetic, history etc.

5. Impact of disciplines

There is wide impact of these disciplines on library and information centres in term of method, technique, procedure, theory, law, principle, rule cannon, formulas etc. directly and indirectly in their functioning. These disciplines are as follows.

5.1 Geography

Clark Audrey (1990) Geography as "The study deals with the material and human phenomenon in the space accessible being their instruments (space-2-3-4) especially the pattern of, and variation in, this distribution in that space, on all scales, in the past or present". In other words, geography is systematic study of spatial variation on earth surface which includes lithosphere, hydrosphere, atmosphere and biosphere. In simple meaning, any systematic study of **"SPACE"** is the field of geography. There is direct relationship of geography to library and information centre

because libraries are located either on land (printed) or air (virtual) library. There is wide impact of geography in the following areas:

- Impact of physical factors (land, water, air, and physiographic regions i.e. Mountain, plain, plateau, desert) and cultural factor (population, language, religion, culture) in the growth and development of library and information centres.
- Impact of climatic conditions on library building, document collections, services, and efficiency of the library staff.
- Application of geographical methods/techniques i.e. Map etc. to highlight various aspects of library and information centre.
- Geographical knowledge helps to library staff to solve various problems of library and information centers .in term of location, selection of site construction of building management of record health of peoples and over all progress of library.

5.2 Sociology

Chopra Ramesh (2005) Sociology as "The study of the human behavior and societies giving particular emphasis to the industrialized world. **Pearsall Judy (2003)** Sociology as "The study of the development, structure and functioning of human society". In simple meaning any systematic study of "Society" is the field of sociology. There is direct relationship of sociology (society) to library and information centres because libraries are established by the society, for the society and of the society. Sociology (society) affect library and information centres in the following manner.

- Without society, no existence of library is possible. Society support library in term of moral, physical, financial resources. So Society is life- line for the libraries.
- Library preserves record of civilization and transfer to generation to generations to the members of society.
- Shape & size of the library depend on nature of societies i.e. (cave, pastoral, agriculture, industrial, information and knowledge society).
- Libraries are considered social organizations which are also known the mirror of the society.
- Without libraries there is no concept of better society because library assists to the member of society to fulfill their information needs at the optimum level to make them better citizen.

5.3 Management

Johannsen Hano and Terry. (1993) Management as "Effective use and coordination of resources such as capital, plant materials, and labors to achieve objective with maximum efficiency[8]. In other words, Management is the system which leads guides and directs the organization to achieve its predetermined objectives. The important areas of management are personnel, finance, technology, market etc. There is direct relationship of management to library and information centres in the following areas.

- Application of management principles, i.e. POSDCORB (Planning, Organizing, Staffing, Directing, Coordinating, Reporting and Budgeting) in administration of library information center.
- Management of library materials, services, technology, personal, equipments, finance etc.
- Use of budgeting techniques (i.e. Planning Programming, Budgeting System (PPBS) Zero Base Budgeting System (ZBBS) in preparation of budget of libraries.
- Use of Decision Models/techniques in library management and their administration. such as Program Evaluation Review Techniques (PERT)
- Application of management skills i.e. planning, organizing, technological etc in library information centre for better management.

5.4 Economics

Christine Ammer and S. Dean Ammer. (1977) Economics as "The study of production, distribution, exchange and consumption of goods and services". Any systematic consideration of "economy in term of money, time and procedure is the field of economics. There is a direct relation of economics with library and information centres in the following areas.

- Application of 'Law of demand and supply' in relation to acquisition of documents and users needs.
- Economic planning of library information centers at micro/macro level.
- Library can not survive without adequate funds because they are considered non-profit organizations and always need of funds to fulfill unlimited demands of the users.
- Adoption of concept of systematic study of production, distribution, exchange and consumption goods (library material) and services in library
- Role of bank conversion rate, discount, insurance, sales tax, etc., affecting functioning of library and information centers in acquisition of documents

5.5 Knowledge (Epistemology)

Bloomsbury (2005) Knowledge as "General awareness or possession of information, facts, ideas truths or principles". There is various type of knowledge i.e. formal, perceptive, descriptive and technological etc. Knowledge is associated with society, religion, philosophy science, technology, arts, and organizations. Knowledge has direct relationship with library and information centres in the following areas-

- Knowledge of librarian/library staff regarding library system, users, rules ,parent institution, society etc.
- Application of knowledge in classification and cataloguing, indexing, abstracting, translation, etc.
- Use of information technological knowledge in conservation, preservation, generation, transformation, repackage and in dissemination of information.
- Adoption of knowledge in. proper selection of methods techniques, laws, rules, to achieve objective of the organization in a better way.
- Knowledge/skill of staff about better utilization of library resources.

- Knowledge of changes i.e. social, political, economical, psychological, technological etc and their impact on libraries.

5.6 Linguistics

Hartmann and James (1998) Linguistics as an "Academic discipline concerned with the study of language in all its manifestation". In other words, linguistics is study of languages. **Singh (2004)** Communication as "The process or act of carrying a message, designated to generate to response, through which communication process carried out". There are various types of communication i.e. oral, written, visual, interpersonal, etc. There is direct relation of languages and communication with library and information centres in the following manner.

- Oral/written communication by the librarian to staff members, users and authorities.
- Use of communication language, i.e. English, Hindi, Urdu or any other language including sign and symbols indications use of communication.
- Visual communication in the form of photographs, pictures, drawing to highlight various aspects of library and information centres.
- Use of interpersonal communication among staff members of the library.
- Application of communication models/method/techniques/aids for effective communication to achieve objective of organization in a better way.

5.7 Law

Biswas (1982) "Law is synthesis of order and justice. Under article 13 of the Constitution of India, unless the context otherwise requires law requires, any ordinance, order, by-law, rule, regulation, notification, custom or usage in having the territory of India the force of law. The constitution of India article 13(3) (a) law includes an ordinance issued by President or Governor". In simple meaning any systematic approach for justice is law. It covers vast field's i.e. international, constitutional public, social, private, individual, law etc. There is indirect relation of law on library and information centres in terms of following aspects.

- Impact of law International/national/state/local government on functioning of library information centers.
- Application of principles/rules in acquisition, processing, and dissemination of information.
- Implementation of law in appointment, promotion, demotion of employees of the institution.
- Impact of law of the disciplines as five laws of library science. In over all functioning of libraries.
- Laws of the parent institutions and their impact on libraries in terms of governance.
- Library manuals regarding utilization of library resources, staff, users etc.
- Library legislation acts and their impact on library and information centres.
- Impact of others laws as Fundamental Rights of the Citizen, Right to Information, Copy Right Act, Information Technology Act, etc. their role dissemination of information.

5.8 Mathematics

Cowie (1969) Mathematics as "Science of number, quantity and space of which e.g. arithmetic, algebra, trigonometry and geometry are branches"[1]In simple meaning any systematical study of measurement/calculation is the field of mathematics which covers Algebra, Arithmetic, Topology, Analysis, Geometry, Probabilities. The allied branches of mathematics are Statistics and Operation Research etc. There is indirect relation of mathematics to library and information centres in the following areas:-

- Application of mathematical models, flowcharts, principles, formulae to find out solution of various problem of the library.
- Highlight progress of library and information centres with the help of statistical techniques, i.e. pie, bar, graph, chart, mean, mode, median etc.
- Use of mathematical/statistical in maintenance of the record of library in term of collection, staff, users and finance etc.
- Use of sign/symbols to locate various division/sections of the library.

5.9 Commerce

Hanson (1974) Commerce as "A comprehensive term for all forms of export, imports and all the services which assist the country on trade, such as banking, insurance, and transport". In simple meaning any activity of buying and selling especially at large scale is commerce.

There is an indirect relation of commerce with library and information centres in the following areas.

- Subscription of books/journals of the reading materials for the users.
- Generation of resources through selling of information products i.e. CDs/CD-ROMs, services, library software, organization of short term courses/training programmers, etc.
- Transportation of library material through air/water and land routes.
- Impact of World Trade Organization in libraries in terms of import and export of library materials.
- Provision of consultancy services on commercial basis.

5.10 Information Technology

Stocks Adrian (1985) Information Technology as "The scientific, technological, and engineering disciplines and management techniques used to information handling and processing; their application; computers and their interactions with men, machines, and associated social, economic and cultural matters". In other words, any technology used in handling of information is information technology. There is wide field of technological sciences i.e. civil, mechanical, electrical communication, publishing, storage, dissemination etc. There is indirect relation of technological sciences especially information technology in library and information centers in the following areas:-

- Application of civil/mechanical/electrical engineering in library building, and providing physical facilities to the users.
- Use of Ergonomics in library's equipments/furniture/fixtures.
- Impact of storage technology i.e. reprographies, micrographic, microfilm microfiche, ultra fiche, CDs, DVDs, etc. to store the information.

- Adoption of dissemination/communication technology i.e. phone, cell phones, e-mail, voice mail, tale text, fax etc. for faster communication.
- Application of library automation software packages for digital libraries.
- Use of Publication technology i.e. desktop publication in library materials.
- Impact of information technology in the area of library personnel, material, management, users and library services.

5.11 Education

Landu Sidney (1978) Education as "The development and training of one's mind, character, skills, etc. as by instructions, study or example". In simple meaning education means to educate people in any form. The important aspects of education are primary, secondary higher, adult continuing education curriculum, teaching method/technique of etc. There is indirect relation of education to library and information centres in the following fields.

- Application of academic/professional/technical, education of library staff by the institutions to find out solution of various problem of the library system.
- Organization of 'User Education Programme' for better utilization of library resources.
- Conducting of 'Users Studies Programme' to assess information needs of the people.
- Participation of library staff in seminars/conferences/workshops/short term courses for professional development.
- New methods of teaching aids such as multimedia to impart education to the library professionals.

5.12 Political Science/Politics

Landu Sidney (1978) Political Science as "The science of form and principles of government." Thus political science refers systematic study of process of politics. In other words, politics is how to govern/control of different level institutions, local, state/national/international etc. The other important aspects of political science are relation of state to social groups, political process, migration, legislation, etc. In simple meaning, politics refers to control the organizations/institutions/people etc. There is indirect relation of politics on library and information centres in the following areas:-

- Role of politics in appointment/promotion/demotion of library authorities i.e. Vice Chancellor, Registrar. Director of the institutions.
- Politics of librarian in distribution/delegation of power to the heads of divisions/sections of the library.
- Politics of library staff to gain the favour of librarian to get maximum benefit from library.
- Politics of users how to get maximum benefits from the library and information centres.
- Politics of authorities (V.C./Registrar) to solve the problems of library & information centers

5.13 Psychology

Singh Surendara (2002) Psychology as "A branch of science that deals with the behaviour of human and other animals". In other words, psychology is systematic

study of behaviour of living organisms. In simple meaning psychology is a systematic study of state of mind of living organism. There are several aspects of psychology such as physiological, genetics, comparative, abnormal and applied etc. It has been observed that there is indirect relation of psychology with library and information centres in the following areas:-

- Psychology of the users i.e. students, research scholars, faculty members, non-teachers of members regarding facilities services, staff, and over all about library system.
- Role of psychological factors i.e. motivation, ego, confidence, status etc. in professional development/achieving objectives of library.
- Perception of library staff with respect to librarian, users, library system etc.
- Opinion of librarian about library staff, users, library systems, library authorities etc.

5.14 Philosophy

Pearsall Judy (2003) philosophy as "The study of the fundamental nature of knowledge, reality, and existence. The study of the theoretical basis of branch of knowledge or experience." In other words, philosophy is study of particular system of belief, causes and principles. In short philosophy means of find out truth/reality. The important concepts of philosophy are inductions, deductions, social, practical, individual, community philosophy etc. There is indirect relation of philosophy to library and information centres in the following areas.

- Philosophy of librarianship/five laws of library science in functioning of library and information centres.
- Philosophy of librarian in organization and management of library and information center.
- Role of philosophy of individual person, library staff, users, members of society in the growth and development of library and information centers.
- Application of the philosophical techniques to find out solution of the various problems of the library with the help of perception, inferences, logic, reasoning etc.

5.15 Miscellaneous Disciplines

There are a few others discipline which have relation to library and information centres indirectly. These subjects are Ethics, Aesthetics, and History etc.

(a) Ethics: -

It is science of moral. It has indirect relation to library and information centres in terms of moral responsibility of employer to employees, clientele system, librarian, responsibility to staff, users, library system/staff responsibility to users, systems, institutional librarian and users responsibility to library system, staff, institution for optimum benefit each other.

(b) Aesthetics: - It is science of decoration/beauty. It has indirect relation to library and information centres in terms of library aesthetic regarding aesthetic quality of day to day functioning in terms of library building, lawn, location of division/sections display of library collection/physical setting of furniture/equipment and methods/techniques applied in decoration of library.

(c) History: - It is systematic study of time. It has indirect relation of the library and information centres in terms of their history of various aspects i.e. history of library, education, institution, material, technology etc. and communicate message how to improve system in the light of past experience to achieve objectives library and information centers in a better way.

B Library and Information Science

There is a wide impact of subjects i.e. geography, sociology, management, economics, epistemology education ,law, mathematics and statistics ,Information technology ,political science, psychology , philosophy , ethics, aesthetics, history, commerce, Linguistic factors methods and techniques, laws and principles, etc various aspects library and Information Science in the following manners.

Geography: Impact of geographical factors in establishment & development of infrastructural facilities, efficiency of staff, application of tools & techniques in library schools.

Sociology: Assessing information needs of users, and designing of the curriculum keeping in view of challenges and changes in the society.

Management: Application of management principles methods and techniques skills In organization and management of Knowledge.

Economics: planning of progress of the library schools in terms of finance, design of curriculum, application of information technology for training purpose.

Epistemology: Understanding Laws principles, canons, in origin and development of disciplines (subjects) and their impact on knowledge management.

Linguistics: Adoption of medium of instruction for teaching, evaluation of students performance in the examinations.

Law: Following Rules and regulations, Laws, Principles in distribution of teaching work, evaluation of students, over all progress of the institutions.

Mathematics & Statistics: Application of mathematical models in teaching, use of statistical techniques. i.e. pie, bar diagram, graph etc. for highlighting progress of library schools.

Commerce: Buying and selling of information products(printed/non -printed) and in the form of services (information technology training programmes) etc.

Information Technology: Application of information technology (storage, communication, etc.) for learning, practical training to the students.

Education: Use of method & techniques, tools for teaching, design of curriculum ,orientation of faculty members etc.

Political Science: Applying principles of politics in appointment, promotion, distribution of work of faculty members, evaluation of students etc.

Psychology: Assessing psychology of authorities, faculty members, students in gaining favor, expertise, cooperation respectively.

Philosophy: Understanding philosophy of disciplines especially librarianship to quality of teaching, curriculums, evaluation etc.

History: Tracing history of institutions, library education, training etc. for scientific growth and development of library schools.

Aesthetics: Understanding sense of aesthetics for physical get up of library schools, in terms of building, furniture, lawn etc.

Ethics: Realizing responsibilities regarding parent institution, colleagues, students, society etc. to achieve objectives of the institution in a better way.

Conclusion

Now a days change are occurring in the form of globalization, modernization, urbanization, digitization, specialization, commercialization, etc. These changes are affecting the life style of people, horizon of disciplines/subjects, functioning, shape and size of the organizations. In the changing scenario library information & centers are facing problems how to fulfill the information need of the people speedily, accurately, economically, scientifically, rationally, timely etc. In such circumstances libraries are bound to adopt the change to perform their duties effectively and efficiently. Now the question arises what types of changes should be adopted not and what not this is very crucial problem. In my opinion library schools should include those changes which are beneficial for the **system, staff, users**, and should produce philanthropists, managers, technocrats, scholars by providing them adequate training. This can only be achieved by library schools if they design their curriculum of library education based on **challenges and changes in society**, development in the disciplines, in general with particular reference to philosophy **of disciplines and Librarianship.**

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Use of MPKV Library OPAC Using SLIM 21 Library Software

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ABSTRACT

This paper examines Online Public Access Catalogue of MPKV University Library, Rahuri. OPAC is an information retrieval system, has revolutionized access to bibliographic information through search capabilities such as keyword searching, Boolean searching, truncation, proximity searching, and item identity number searches. The paper discusses various aspects of OPAC such as how to search, options of OPAC use etc., application of SLIM 21 as a form of resource sharing tool and a single authoritative source of MPKV University library resources.

Keywords: MPKV, Agriculture University, Online Catalogue, Library Networks, SLIM 21 & OPAC.

1. INTRODUCTION

During the recent period, quite a large number of libraries and information centers are forming union catalogue for sharing the resources among the participating Libraries. The advent of computer networking as an accepted part of the library and information infrastructure has had a very significant impact on the way in which library and information systems are perceived. India is thus on the threshold to a new era of computer communication networks both for general purposes and for library and information purposes. The following principles are motivated behind the union catalogue:

- Maximizing the utilization of existing information resources / collection by sharing
- Providing speedy access to information resources located at different places through communications channels for mutual benefit.
- To avoid duplication in the information process and control over the collection.

The escalating cost of information resource materials, increasing cost of processing documents and their information contents, decreasing budgets in terms of real worth and wide use of computers have also contributed to the development of union catalogue.

2. CONCEPT OF UNION CATALOGUE

Union catalogue in the broader sense can be any formalized system of information exchange. But, in modern union catalogue, technology is utilized to link libraries, specialized data resources, or individuals to the persons or institutions in need of information. An union catalogue usually consists of a formal arrangement whereby materials, information, and services provided by a variety of libraries and other organizations are available to all potential users.

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Libraries may be in different jurisdictions but agree to serve one another on the same basis as each serves its own constituents. Computers and telecommunications may be among the tools used for facilitating communication among them tonic document sources in MPKV University library.

3. OBJECTIVES

- To develop a union catalogue database of print and electronic document sources in MPKV Library.
- To provide bibliographic access to the information resources available in the University Library.
- To utilize the resources in a better way, by disseminating the specific areas of interest available in the region.
- To generate new services and to improve the efficiency of existing ones.
- To develop forums for interaction among information professionals and users and thereby, helping them seeking solutions to common problems.
- To promote and support adoption of standards in library operations.
- To provide a common platform for document supply requests.

4. REVIEW OF LITERATURE

Banieghbal (2001) investigated the situation of 34 libraries affiliated with Tehran University in terms of their organizational structure, information and human resources, and facilities and services. Also examines the feasibility of establishing an information network, and discusses the grounds for cooperation among libraries and its impact on resource sharing in order to offer information services more effectively and quickly. Finally established an information network among libraries affiliated with Tehran University could considerably improve the status of information and technical services. describes the Penang Library Network (PLN) is a network of private and public higher education libraries formed with the aim of bringing Penang"s citizens to the forefront of uniform access to a knowledge warehouse through the use of information and communication technologies. Khan (2005) describes the resource sharing and networking activities among universities in Pakistan in 2005. The Pakistan Education and Research Network connect all the public and private universities in the nation through a highspeed network. It allows real time transfer of audio and video, multimedia-enabled lectures and remote research partnership. Zhang (2009) describes the construction of resource librarybased network teaching platform of English extensive reading course is the actual manifestation of the rapid development of network communication technology and multimedia technology. The network-teaching platform mainly is composed by curriculum-teaching platform, the management system and auxiliary teaching resource library.

5. SCOPE

MPKV library have already computerized their housekeeping operations and have created bibliographical databases of their collections. MPKV will develop a resource-sharing model. MPKV Library can avail inter-library loan and document delivery services. The study also aims at collects academic and research interest of the user. The bibliographic records of Books will be updated in union catalogue of books

under ICAR- e-Granth Project. The author has given an overview of proposed network model.

6. METHODOLOGY

The methodology employed for developing MPKV is outlined as follows;

6.1 Technology Platform

SLIM 21

Slim21 is integrated, Multi-user, Multi-tasking library information software for the windows environment. Slim21 helps to catalogue books, films, sound recording, drawings, clippings, articles, reports, letters, pamphlets, serial publications. All those things that contain information so vital to your organization. Slim21 cataloguing adheres to popular international standards. This means you can exchange dat with the world. Retrieval of the data is simple, fast and efficient. Even a catchy phrase in the description of the catalogued item can be used for searching. SLIM21 contains the following modules

Cataloguing, Circulation, Serial Control, Acquisition, OPAC, Web based OPAC, Bulletin Printing (CAS), Statistical Analysis.

MPKV Library uses Slim21 software because of their salient feature are as below:

1) Slim 21 can be configured for specific requirements by choosing one or more of these standard and add-on modules.
2) These modules work on the same data from different nodes of a network.
3) Slim 21 works just as well on a stand-alone machine as it does in a network of computers.

Library can be browsed through the Internet/ Intranet with SLIM 21.

The online union catalogue has developed based on SLIM 21. SLIM 21 Library Automation Software has installed at the University Central Library. SLIM 21 library management system modules were customized for online union catalogue model. Metadata was created as to the MARC 21 format and multiple library databases were created. 1,09,764.

The below picture is a main page of MPKV Library web and it gives the information about all types of resources available with the libraries and instructions to search the catalogues effectively.

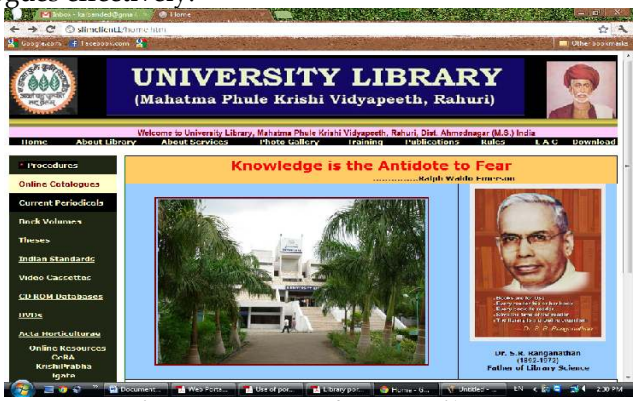

Fig:1 Home Page of MPKV Library

SEARCH / BROWSE INTERFACE

This user interface allows the faculty and students to search the bibliographic details of books, journals and other bibliographic records from MPKV server. This is an Simple Search Interface.

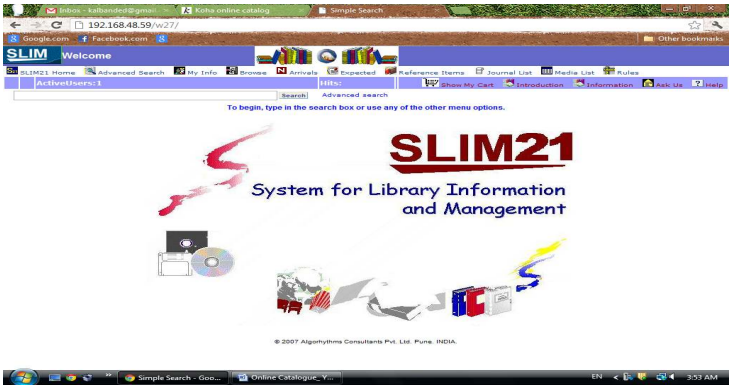

Fig. 2 : Opening Screen of the mpkv user interface

ADVANCE SEARCH

This interface allows the advance interface for searching the bibliographic details of the all records. Their total five interface available like Title, Keyword, Publisher & Class Number for a type of Documents like books, Bound Volumes, Journals etc.

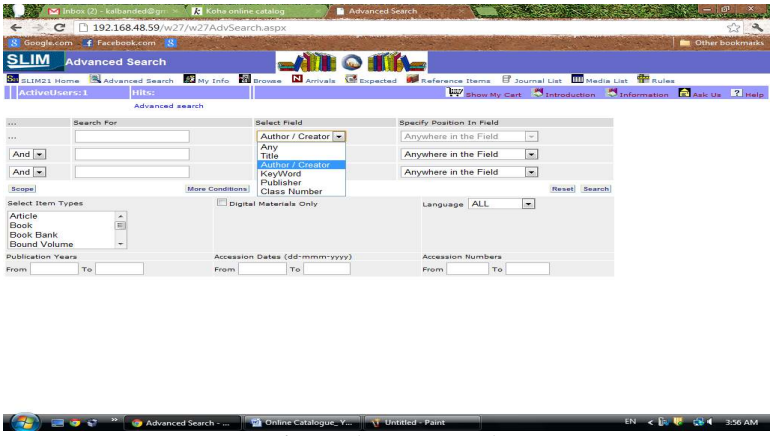

Fig.3 Advance Search

DISPLAY OF OPAC OUTPUT

OPAC and online union catalogue of mpkv can be accessed and viewed by selecting field name then enter the search term and click on 'search' button. It will show all the bibliographic record of books on the basis of search term with respect to search field. Book jacket is also enabled for better visualization. As shown on below fig.4.

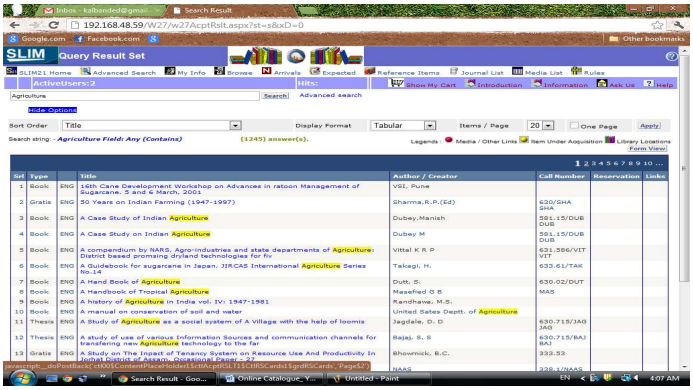

Fig. 4 : OPAC – Output Search

SELECTION OF LANGUAGE AND TYPE OF DOCUMENTS

Unicode system has been enabled in this networked model to search user's respective language, also can select / search the resources by selecting the library database for a quick retrieval. As shown below fig 5.

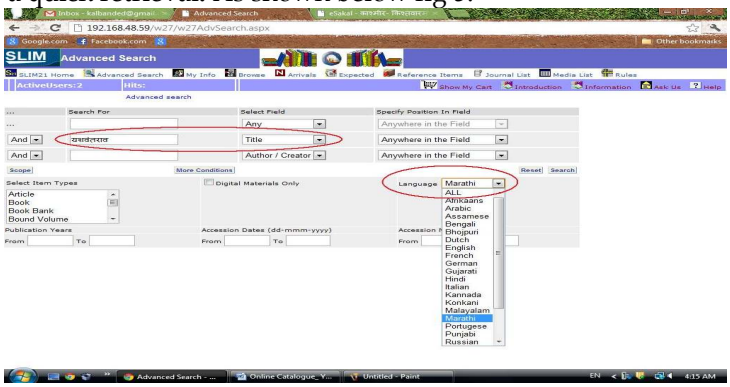

Fig.5 : Selection of Type of documents and Language - OPAC Search Screen

BIBLIOGRAPHIC DETAILS AND ITS LOCATIONS

The below figure displays the bibliographic details of a selected record with its available locations like institution name, status, call number and other relevant information.

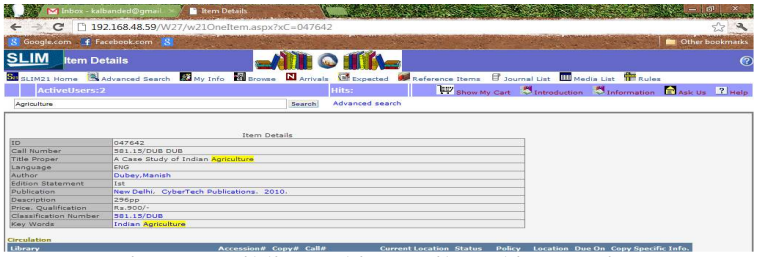

Fig. No 6: Bibliographic Details and its Location

SERVICES PROVIDED BY MPKV LIBRARY

- The Union Catalog is a source for searching for and finding a particular document, or gathering information about documents concerning certain topics that are available in the institutions of this region.

- Provision of reference and inter-library services, i.e. sending a loan request to ILS, where the identifying data for a library are generated from the directory and the document data from the record in the Union Catalog;
- The Union Catalog allows the user to locate the library that holds the document in question, and possibly also to obtain detailed data about the documents shelf mark, usually facilitating the borrowing of the document.
- The Union Catalog makes it possible to act on a request to borrow a document or request its copy (Inter-library Loan Service—ILS).

FUTURE PLAN

- All databases of constituent colleges are to be incorporated in Union Catalogue
- Institutional Repository is to be linked to the Union Catalogue
- AgriCat and WorldCat (OCLC) is to be linked to the Union Catalogue

CONCLUSION

The free flow of information and knowledge is a basic prerequisite for the development of modern societies. The coordinated creation of and access to library catalogs, relying on modern technology, make significant contributions to the society development. Long-term practice supports the belief that one of the most effective instruments for promoting the free flow of knowledge is the union catalog and the best method for creating it is cooperative cataloging, which is labor-saving and contributes to the quality education. The fundamental principle in creating a union catalog is the controlled harvesting of data of the broadest possible scope, with the aim of creating a concentrated information base and a qualitatively and quantitatively rich source of secondary documents (records). This principle, if followed, allows for the introduction and development of additional services for the users of libraries and information institutions, as well as for librarians themselves. This kind of initiative in regional and root level would integrate the rich information environment with ease access of sustained quality in Library and Information Services.

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Utilisation of Electronic Information Resources by the Faculty of Autonomous Engineering Colleges Affiliated to Visvesvaraya Technological University, Karnataka: An Empirical Study

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Abstract

The purpose of the paper is to determine, demonstrates and elaborates the various aspects of use of electronic information resources, source of awareness, learn to access and use, benefits of using e-information resources, preferred version of information resources, preferred browsers and search engines, preferred search option, search techniques and problems faced by the faculty members of autonomous engineering colleges in Mysore district. A well structured questionnaire was administered among faculty members of The National Institute of Engineering and Sri Jayachamarajendra College of Engineering, Mysore to collect the necessary data, keeping in view the objective of the study. The responses reveals that 170 (71.72%) of the faculty use electronic information resources for their academic and research activities, 161 (94.70%) faculty use e-journals to large extent compared to other types of electronic information resources. The study also reveals that the faculty prefer both print and electronic information resources, but the faculty are slowly migrating from traditional to electronic version of information resources to fulfil their academic information needs.

Keywords: Electronic Information Resources, E-resources, Search techniques, Search pattern, Engineering colleges.

1. Introduction

The rapid growth of new technologies has changed the communication process between people and reduced the cost of communication for individuals. Electronic information resources can be seen as the most recent development in information technology and it is one of the most powerful tools ever invented in human history. In the modern era it has created the way the people communicate with each other and the way information is accessed. It has rapidly become an established medium of communication and connects people across the globe, removing geographic boundaries and simplifying access to information. Libraries all over the world are established to enrich the knowledge of the users through provision of vital information. This manifests more in the technical institutions where students and faculty members and other readers are expected to use the library for teaching, learning and research. Access to electronic information resources has been a major boon to technical and research libraries. E-resources are considered the note chord of any library's collection and have become indispensable for research in any field. Many types of e-resources are available in various form and are being directly accessible through the internet.

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The major developments in library and information systems in the past two decades is the advent and spread of electronic information resources, services and networks mainly as result of developments in information and communication technologies. The commonly available electronic information resources, namely, e-journals, e-books, e-databases, e-tutorials, e-standards, e-thesis and dissertations, e-conference proceedings, online databases, online public access catalogues and the internet and other networked information sources are competing and in some instances replacing the print-based information sources.

2. Review of literature

Various studies have been carried out on the use of electronic information resources by the students, faculty and research scholars of institutions of higher learning.

Rusch-Feja (1999)[1] studied the use and acceptance of electronic journals that significantly high acceptance of electronic journals and an unwillingness to return to print versions. While evaluating the frequency of use of electronic journals from four scholarly publishers it is identified that use of Elsevier Journals was on higher side. Further in this study the four scholarly publishers were rated the advantages and disadvantages these publications. Tenopir (2003)[2] in a major survey of literature on the subject analyzed, the results of two hundred studies on the use of electronic resources in libraries published between 1995 and 2003.Results drawn from this study indicate that electronic sources have been rapidly adopted in academic spheres, though the behaviour varies according to discipline. Ekwelem, Okafor and Ukwoma (2007)[3] described EIS as information sources that are available and can be accessed electronically through such computer networked facilities as online library catalogues, the internet, the world wide web and digital libraries. Issa et al. (2009)[4] in their study reveal that the University of Ilorin Library users have awareness of the library e-resources but do not use them because of lack of skills. They have not been formally taught the use of e-library resources and lack of adequate IT skills prevents them from using computers in the process. Majority of the students had the understanding of evaluating information as contained in ACRL standard-3. Thanuskodi (2011)[5] examine the usage of electronic resources at Dr T.P.M. Library, Madurai Kamaraj University. Study revealed that M.Phil. students respondents took the first position in their overall methods of searching e-resources, postgraduate student respondents the second position, PhD Scholar respondents the last position. The study confirmed that respondents were aware of the e-resources and various types of e-resources, e-database, and e-journals. The study recommended the improvement in the access facilities with high internet speed and subscription to more e-resources at Dr T.P.M. Library, Madurai Kamaraj University. Ali and Nisha (2011)[6] examined the extent to which research scholars at Central Science Library, University of Delhi, India were aware and made use of e-journals. The results showed that more than 60% of users were using e-journals weekly for the purpose of research. Print journals were consulted by the majority of users compared with e-journals. Using keyword was the most popular search method for searching e-journals among research scholars, whereas the date of publication was the least desired

option. However, it was found that slow downloading of PDF files was the major problem that would discourage users while using e-journals

3. Autonomous Engineering Colleges in Mysore.

The Mysore districts has two autonomous engineering colleges affiliated to Visvesvaraya Technological University, Belgaum, Karnataka. Namely, The National Institute of Engineering and Sri Jayachamarajendra College of Engineering.

3.1 The National Institute of Engineering.

The National Institute of Engineering, Mysore, in the state of Karnataka, India, spread on an 11.85 acre state of the art campus being the state's second oldest institution, established in 1946 and Mysore's first Institute to offers technical education. The institute offers Undergraduate, Postgraduate and Doctoral Programmes in Engineering and Technology. It is a recognized Research Institution under Visvesvaraya Technological University, Belgaum. The Visvesvaraya Technological University has granted status of Autonomous in 2007.

The National Institute of Engineering has one of the best engineering college libraries in the state. The National Institute of Engineering established its library in the year 1946 the library collection is about 78,450 volumes. The library amazingly rich collection contains Abstracts, Directories, Yearbooks, Biographical sources, Textbooks, Thesis and Dissertations, Encyclopedias and General books including Kannada novels. The library is also subscribing for print and electronic journals in large numbers to cater the information needs of users. The library has subscribed full text online database through AICTE-INDEST consortium and others to its users. The databases subscribe through AICTE-INDEST and other consortiums are ASCE Online, IEE Online, Elsevier, ASME, Springer, McGraw Hill, ASTM Digital Library, J-Gate and NPTEL facility to access the video lectures. The library homepage also provide links to other open source resources like DOAJ, Open J-Gate, DOAR, Online reference materials etc. The Library has also subscribed full package of DELNET-AICTE resources. The digital library has huge collection of previous question papers, patents, standards, research publications, tutorials, conference proceedings, drawings etc.

3.2. Sri Jayachamarajendra College of Engineering.

Sri Jayachamarajendra College of Engineering established in 1963. The institution has the reputation of academic, excellence in professionally oriented programs, and equal proficiency in extra-curricular activities, that makes it a lucrative option for students from all over the country.

The institute offers Undergraduate, Postgraduate and Doctoral Programmes in Engineering and Technology. It is a affiliated to Visvesvaraya Technological University, Belgaum. The Visvesvaraya Technological University has conferred the Autonomous status to the college from the year 2007.

Library and Information Centre being one of the very important organs of the system, is the centre of all activities on the campus. The library is equipped with over 94,557 volumes covering all branches of Science and Engineering, Encyclopaedias, Dictionaries, Hand Books, Data Books etc. It has adopted open access system and maintains OPAC to access the stack. Library is subscribing over 330 print

version of Technical journals covering both National & International. It also subscribes e-journals and other e-resources subscribed through AICTE- INDEST and others like ASCE, IEEE, Springer Link, Pro Quest Science, Web of Science, Emerald, ASME and also provide facility to access open source journals like J-GATE Publishers URL's etc. The library has subscribed full package of DELNET-AICTE resources. Library also have a Digital Library with large collection of question papers, reports, thesis etc. The library homepage also provide links to other open source resources like DOAJ, Open J-Gate, DOAR, Online reference materials etc.

4. Objectives of the study

The objectives behind conducting present study are:

1. To find out the types of electronic information resources used by the engineering faculty.
2. To find out the source of awareness and benefit of using electronic information resources.
3. To identify the preference of web browsers and internet search engines.
4. To investigate different search methods used by engineering faculty to retrieve information from electronic information resources.
5. To examine the awareness of advance search methods among faculty.
6. To investigate whether the availability of electronic information resources discourages the use of printed resources.
7. To find out difficulties faced by faculty while accessing electronic information resources.
8. To suggest ways and means for maximising use of electronic information resources by faculty members in engineering colleges.

5. Methodology

The questionnaire method was used for the present study to collect the necessary primary data, keeping in view the objectives of the study. Total 237 questionnaires were randomly distributed among the faculty members of both the institutions, 112 questionnaires to the faculty of The National Institute of Engineering and 125 questionnaires to Sri Jayachamarajendra College of Engineering. Total 175 filled-up questionnaires were received back consisting of 86 responses from the faculty of The National Institute of Engineering and 89 from the faculty of Sri Jayachamarajendra College of Engineering. The overall response rate of the study was 73.83%. Among 175 respondents 05 faculty are not using electronic information resources. The response rate of using electronic information resources by the faculty is 170 (71.72%). In addition to questionnaire method, interview schedule and observation method were also used to collect required information as a supplement to the questionnaire method to bring more clarity to the data which are essential and use for analysis and interpretation of data.

6. Analysis and Interpretation of Data

The data was collected by different methods were analyzed and interpreted and same has been presented in the following tables.

6.1 Designation wise distribution of the respondents

The designation wise distribution of the respondents has been summarised in the form of table-1

Table 1 : Designation wise distribution of the respondents

Designation	Number	Percentage
Assistant Professor	116	68.23
Associate Professor	22	12.94
Professor	32	18.82
Total	170	100.00

It is seen from the above table that 116 (68.23%) of the respondents are Assistant Professors, 22 (12.94%) of them are Associate Professors and 32 (18.82%) of them working as Professors.

6.2 Gender wise distribution of the respondents

The gender wise distribution of the respondents has been summarized.

Table-2: Gender wise distribution of the respondents

Gender	Number	Percentage
Male	120	70.58
Female	50	29.41
Total	170	100.00

The table-2 depicts that out of 170 respondents, 120 (70.58%) respondents were male and 50 (29.41%) are female.

6.3 Age wise distribution of the respondents

The age wise distribution of the respondents has been summarized in the form of table-3.

Table-3: Age wise distribution of the respondents

Age group	Number	Percentage
Below 25	03	01.76
26-30	36	21.17
31-35	33	19.41
36-40	33	19.41
41-45	24	14.11
46-50	21	12.35
51-55	16	09.41
55 Above	04	02.35
Total	170	100

It is inferred from the table-3 that only 03 (01.76%) of respondents are in the age group of below 25 year, 36 (21.17%) of respondents belongs to the range of 26-30 years, 33 (19.41%) belongs to the range of 31-35 years, 33 (19.41%) were in the range of 36-40 years, 24 (14.11%) belongs to the range of 41-45 years, 21(12.35%) belongs to the range of 46-50 years, 16 (09.41%) belongs to the range of 51-55 years and 04 (02.35%) respondent belong to the range of above 55 years.

6.4 Use of electronic information resources

The use of various types of electronic information resources by the faculty has been summarised in the form of table-4.

Table-4: Use of electronic information resources

Electronic Information Resources	No.	%	Electronic Information Resources	No.	%
E-Journals	161	(94.70)	E- Databases	64	(37.64)
E-Books	149	(87.64)	E- Thesis and Dissertations	50	(29.41)
E-Technical Reports	52	(30.58)	E- Patents	28	(16.47)
E-Conference Proceedings	76	(44.70)	Subject Gateways/ E-portals	38	(22.35)
E-Drawings and Designs	55	(32.35)	Blogs, Wikis, RSS feeds	72	(42.35)
E-Teaching Materials	154	(90.58)	Open Source literature	118	(69.41)
E-Standards/ Specifications	49	(28.82)	E- Reference resources	113	(66.47)
E-Tutorials	92	(54.11)	Students and faculty generated resources.	103	(60.58)

The table-4 depicts that majority of faculty members use e-journals at the rate of 161 (94.70%), followed by 154 (90.58%) e-teaching resources, 149 (87.64%) e-books, 118 (69.41%) open source literature, 113 (66.47%) use e-reference resources like online encyclopaedia, dictionaries etc, 103(60.58%) faculty use students and faculty generated resources like project reports, research papers, assignments etc., 92 (54.11%) e-tutorials,72 (42.35%) Blogs, Wikis, RSS feeds, 76 (44.70%) e-conference proceedings, 64 (37.64%) e-databases, 55(32.35%) e-drawings and designs, 52 (30.58) e-technical reports, 50(29.41%) electronic thesis and dissertations, 49 (28.82%) e-standards/specifications, 38 (22.35%) subject gateways/e-portals and 28 (16.47%) faculty use e-patents.

6.5 Source of awareness regarding electronic information resources

The source of awareness regarding electronic information resources by the faculty has been summarised in the form of table-5.

Table-5: Source of awareness regarding electronic information resources

Awareness Factor	Number	%
Bibliographical Database Searching	73	42.94
Announcements in Journals	78	45.88
Cited in report/ journals/conference papers	87	51.17
Referred to me by the librarian	50	29.41
By serendipity, by browsing or looking for materials	81	47.64
E-mail alerts form publishers/distributors etc.	40	23.52
By personal communication with friends, experts and resource persons	122	71.76

Note: Because of multiple choice options the percentage is exceeded to more than 100%.

The table-5 depicts the source of awareness regarding electronic information resources availability. 122 (71.76%) faculty become aware about newly available

electronic resources by personal communication with friends, subject experts and resource persons, followed by 87 (51.17%) cited in report/ journals/conference papers, 81 (47.64%) by serendipity, by browsing or looking for materials, 78 (45.88%) announcements in journals, 73 (42.94%) bibliographical database searching, 50 (29.41%) referred by the librarian and 40 (23.52%) e-mail alerts form publishers/distributors.

6.6 Learn to access and use electronic information resources

The table-6 summarises the results of how the faculty members learn to access and use electronic information resources.

Table-6: Learn to access and use electronic information resources

Learn to use e-resources	Number	Percentage
Trial and error	59	34.70
Self learning	99	58.23
Guidance from colleagues	100	58.82
Guidance from library staff	16	09.41
Attending courses, trainings, workshops and seminars	71	41.76
Guidance from computing staff/Technicians	13	07.64

Note: Because of multiple-choice options, the percentage is exceeded to more than 100%.

The table-6 depicts that majority of 100 (58.82%) learn to use electronic information resources by the guidance from their colleagues, 99 (58.23%) self learnt to access and use electronic information resources, 71 (41.76%) learn to use e-resources by attending courses, trainings, workshops and seminars, 59 (34.70%) trial and error methods, 16 (09.41%) guidance from library staff and 13 (07.64%) guidance from computing staff / technicians.

6.7 Benefits of using electronic information resources

The table-7 below summarises the benefits that the faculty members get due to accessing and using electronic information resources.

Table-7: Benefits of using electronic information resources

Benefits of using electronic information resources	No.	%
Time saving	62	36.47
Better source of information	112	65.88
Access to up-to-date information	138	81.17
Improvement in the quality of professional work	89	52.35
Information available in various formats as per the need.	46	27.05
Easily portability of e-resources	57	33.52
24/7 access to electronic resources	67	39.41

Note: Because of multiple choice options the percentage is exceeded to more than 100%.

It is identified from the table-7 that the use of electronic resources benefits the faculty to access up to date information 138 (81.17%), It also reveals that 112 (65.88%) faculty opinion as better source of information, 89 (52.35%) improvement in the quality of professional work, 67 (39.41%) faculty are benefited by the feature of 24/7 access to electronic resources, 62 (36.47%) time saving, 57 (33.52%) easily portability of e-

resources and 46 (27.05%) information available in various formats as per the needs of the users.

6.8 Preferred web browser for accessing electronic information resources

The preferred web browser by the faculty for accessing electronic information resources has been summarised in table-8.

Table-8: Preferred web browser for accessing electronic information resources

Browsers	Number	%	Browsers	Number	%
Maxthon	27	15.88	Netscape	30	17.64
Google Chrome	114	67.05	Opera	24	14.11
Internet Explorer	152	89.41	Safari	11	06.47
Mozilla Firefox	129	75.88	Silverlight	07	04.11

Note: Because of multiple choice options the percentage is exceeded to more than 100%.

The table-8 depicts that 152 (89.41%) faculty prefer Internet explorer web browser for accessing electronic information resources, followed by 129 (75.88%) Mozilla Firefox, 114 (67.05%) Google Chrome, 30 (17.64%) Netscape, 27 (15.88%) Maxthon, 24 (14.11%) Opera, 11 (06.47%) Safari and 07 (04.11%) faculty prefer Silverlight web browser for accessing electronic resources.

6.9 Preferred search engine for searching electronic information resources

The preferred search engines used by the faculty for searching electronic information resources has been summarised in the form of table-9.

Table-9: Preferred search engine for searching electronic information resources

Search engines	Number	%	Search engines	Number	%
Alta Vista	37	21.76	Magellan	03	01.76
Bing	74	43.52	Lycos	12	07.05
Excite	11	06.47	MSN	56	32.94
Galaxy	12	07.05	Northern Light	03	01.76
Google	165	97.05	Open Text	05	02.94
Hot Bot	18	10.58	SCIRUS	04	02.35
InfoSeek	27	15.88	WebCrawler	---	---
Inktomi	07	04.11	Yahoo	140	82.35

Note: Because of multiple choice options the percentage is exceeded to more than 100%.

The table-9 depicts that 165 (97.05%) faculty prefer Google search engine for accessing electronic information resources, followed by 140 (82.35%) Yahoo, 74 (43.52%) Bing, 56 (32.94%) MSN, 37 (21.76%) Alta Vista, 27 (15.88%) InfoSeek, 18 (10.58%) Hot Bot, 12 (07.05%) each Galaxy and Lycos, 11 (06.47%) Excite, 05(02.35%) Open Text, 04 (02.35%) SCIRUS and Northern Light and Magellan search engines

have same frequency 03 (01.76%). The faculty are not using WebCrawler search engine to search electronic information resources.

6.10. Preferred search option for searching online information resources

The Preferred search option for searching online information resources used by the faculty has been summarised in the form of table-10.

Table-10: Preferred search option for searching online information resources

Options	Number	Percentage
Basic / Simple Search	59	34.70
Advance Search	09	05.29
Both	102	60.00
Total	170	100.00

The table-10 depicts that 59 (34.70%) of faculty members prefer basic search, 09 (05.29%) prefer advance search and 102 (60.00%) prefer both simple and advance search.

6.11 Field based search methods for searching pinpointed electronic information resources

The field based search methods used by the faculty for searching and accessing pinpointed electronic information resources has been summarised in the form of table-11.

Table-11: Field based search methods for searching pinpointed e-information resources

Field Based Options	Most Frequently	Frequently	Less Frequently	Uncertain	Do Not use
Author	85 (50.00)	61 (35.88)	20 (11.76)	02 (01.17)	02 (01.17)
Title	111 (65.29)	44 (25.88)	14 (08.23)	01 (00.58)	---
Subject	85 (50.00)	68 (40.00)	13 (07.64)	03 (01.76)	01 (00.58)
Keywords	80 (47.05)	58 (34.11)	28 (16.47)	01 (00.58)	03 (01.76)
Publisher	17 (10.00)	33 (19.41)	60 (35.29)	38 (22.35)	22 (12.94)
Author add.	04 (02.35)	09 (05.29)	42 (24.70)	66 (38.82)	49 (28.82)
Abstract	06 (03.52)	13 (07.64)	20 (11.76)	48 (28.23)	83 (48.82)

Note: Figures in parentheses indicate percentage.

It is clear from the table-11 that there is a very good spread of use of all search strategy among the faculty. In case of author based field search 85 (50.00%) faculty use most frequently, followed by 61 (35.88 %) frequently, 20 (11.76 %) less frequently, 02 (01.17%) uncertain and 02 (01.17%) faculty members do not use author field search. The title field based search 111 (65.29%) is used by the faculty most frequently, followed by 44 (25.88%) frequently, 14 (08.23%) less frequently and 01 (00.58%) faculty members use title field based search uncertainly. It is clear from the above table that all the faculty are aware of title based field search options. The subject field based search option 85 (50.00%) of the faculty use most frequently, followed by 68 (40.00%) use frequently, 13 (07.64%) less frequently, 03 (01.76%) uncertain and 01 (00.58%) do not use subject search. The keyword field based search is used by 80 (47.05%) of

faculty most frequently, followed by 58 (34.11%) frequently, 28 (16.47%) less frequently, 01 (00.58%) uncertain and 03 (01.76%) do not use. The publisher field based search option is used 33 (19.41%) by faculty frequently, followed by 60 (35.29%) less frequently, 38 (22.35%) uncertain, 17 (10.00%) most frequently and 22 (12.94%) faculty members do not use publisher field based search option. The author address field based search option is used 66 (38.82%) uncertainly by the faculty, followed by 42 (24.70%) less frequently, 09 (05.29%) frequently, 04 (02.35%) most frequently and 49 (28.82%) do not use author address field base search options. The abstract field based search option is used 48 (28.23%) uncertainly by the faculty, followed by 20 (11.76%) less frequently, 13 (07.64%) frequently, 06 (03.52%) most frequently and 83 (48.82%) of faculty do not use abstract based field search option.

6.12 Advance search facilities for searching electronic information resources

The advance search facilities used by the faculty for searching electronic information resources has been summarised in the form of table-12.

Table-12: Advance search facilities for searching electronic information resources

Advance Search Options	Most Frequently	Frequently	Less Frequentl y	Uncertai n	Do not Use
Boolean search	14 (08.23)	59 (34.70)	43 (25.29)	34 (20.00)	20 (11.76)
Truncation/ wildcard search	04 (02.35)	12 (07.05)	26 (15.29)	56 (32.94)	72 (42.35)
Field based search	64 (37.64)	58 (34.11)	29 (17.05)	06 (03.52)	13 (07.64)
Phrases search	93 (54.70)	47 (27.64)	18 (10.58)	05 (02.94)	07 (04.11)
DOI based search	04 (02.35)	39 (22.94)	42 (24.70)	40 (23.52)	45 (26.47)

Note: Figures in parentheses indicate percentage.

Table-12 depicts use of advance search facilities by the faculty members. The most preferred advance search feature is phrase search option. 93 (54.70%) faculty use phrase search option most frequently, followed by 47 (27.64%) frequently, 18 (10.58%) less frequently, 05 (02.94%) use uncertainly and 07 (04.11%) do not use phrase search option. The field bases search option is used by 64 (37.64%) faculty most frequently, followed by 58 (34.11%) frequently, 29 (17.05%) less frequently, 06 (03.52%) uncertain and 13 (07.64%) faculty members do not use field based search options. The DOI based search options is used by 04 (02.35%) faculty most frequently, 39 (22.94%) frequently, 42 (24.70%) less frequently, 40 (23.52%) uncertain and 45 (26.47%) do not use DOI based search option. The Boolean search option is used 14 (08.23%) most frequently, 59 (34.70%) frequently, 43 (25.29%) less frequently, 34 (20.00%) uncertain and 20 (11.76%) do not use Boolean search. The very rarely used search option used by the faculty is Truncation/ Wildcard search, 04 (02.35%) faculty use most frequently, 12 (07.05%) frequently, 26 (15.29%) less frequently, 56 (32.94%) uncertain and 72 (42.35%) do not use Truncation/ Wildcard based search method.

6.13 Preferred version of information resources

The preferred version of information resources used by the faculty members has been summarised in the form of table-13.

Table-13: Preferred version of information resources

Preferred version	Number	Percentage
Print Version	34	20.00
Electronic Version	10	05.88
Both Print and electronic version	126	74.11
Total	170	100

The table-13 depicts that 34 (20.00%) faculty prefer print version of resources, 10 (05.88%) prefer electronic version of resources and 126 (74.11%) faculty prefer both print and electronic version of electronic information resources.

6.14 Problems faced while accessing electronic information resources

Out of 170 faculty members 111 (65.29%) of faculty faced problems while accessing electronic information resources and 59 (34.70%) of faculty members did not face any problem while utilizing electronic information resources. The problems faced by the faculty has been summarised in the form of table-14.

Table-14: Problems faced while accessing electronic information resources

Problems	Number	%
Poor connectivity (Low bandwidth)	34	20.00
Retrieval of irrelevant/ junk information	68	40.00
Frequent power failure	13	07.64
Server down or system problem	28	16.47
Unfamiliar file formats	43	25.29
Change in URL	29	17.05
Change of the content/ information	42	24.70
Non availability of latest software	36	21.17
Unorganized information content	51	30.00
Lack of assistance from library staff	22	12.94
Using electronic resources often detracts from doing work	44	25.88
Lack of IT knowledge to effectively utilize the service/ e-resources	29	17.05

Note: Because of multiple choice options the percentage is exceeded to more than 100%.

The table-14 depicts that 68 (40.00%) of faculty face problem of retrieval of irrelevant/ junk information while searching electronic information resources, followed by 51 (30.00%) unorganized information content, 44 (25.88%) using electronic resources often detracts from doing work, 43 (25.29%) unfamiliar file formats, 42 (24.70%) change of the content/ information, 36 (21.17%) non availability of latest software, 34 (20.00%) poor connectivity, 29 (17.50%) each face problem due to change in URL and lack of IT knowledge to effectively utilize the service/ e-resources, 28 (16.47%) server down or system problem, 22(12.94%) lack of assistance from library staff and 13

(07.64%) of faculty face problem of frequent power failure while accessing electronic information resources.

7 Findings and Suggestions

In the present study the authors have provided a useful summary of use of electronic information resources by faculty of The National Institute of Engineering and Sri Jayachamarajendra College of Engineering, Mysore. The major findings of the study and suggestions to improve the access and use of electronic information resources have been summarised below:

Retrieval of irrelevant and junk information is the major problem faced by 68 (40.00%) faculty members. This problem is faced because of poor information search skills by the faculty members. The library should organize training programme to improve the information search skills of faculty towards effective utilization of electronic information resources.

Majority of 122 (71.76%) of faculty become aware about newly available electronic information resources by personal communication with friends, subject experts and resource persons. Only 50 (29.41%) faculty become aware regarding newly available electronic information resources through the librarian. The librarian and the library staff should create much more awareness among the faculty members regarding newly or already available electronic information resources, so that resources can be used to maximum extent.

It study reveals that 126 (74.11%) of faculty prefer both print and electronic formats of electronic information resources. Though there is a switch over from traditional to electronic information resources is increasing day by day. The print format of information resources plays equal importance as electronic format. The library and information centre should maintain both print and electronic version of information resources to fulfil faculty information needs.

The preferred web browser by the faculty is 152 (89.41%) internet explorer and 165 (97.05%) faculty prefer Google search engine. It is clear from the study that the faculty members have good knowledge of different web browsers and search engines.

Majority of faculty are aware and use advance search facilities for effective retrieval of required information. The knowledge of advance search facilities should be further increased by providing hands-on training to the faculty.

The technical institutions should organize seminars, workshops and orientation programmes for faculty and students at regular interval of time to keep them in phase with latest technologies.

Conclusion

In the digital era, people live in two environments real time environment and virtual environment. The emergence of internet as a ubiquitous global information and communication resource propelled people's lives into the digital epoch. Due to rapid advancement in information communication technology the internet has become an inseparable part of today's engineering educational system. With the development in the area of internet and information technology, more and more of the educational resources are being produced, distributed and accessed in the digital

format. The dependency on internet based services is increasing everyday and users of engineering colleges too are depending much more on information resources available through internet for various educational purposes. There is slowly switch over form traditional resources to electronic information resources as days are passing, but it is observed from this study that faculty members still prefer to access both print and electronic formats of information resources. The electronic resources in the virtual world represent a large investment of people's effort, money and wisdom. The users of engineering colleges should make optimum utilization of electronic information resources available to fulfil their information needs.

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Stress Management for Library professionals in Changing Environment

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Abstract

Stress management is the amelioration of stress and especially chronic stress often for the purpose of improving everyday functioning. Stress is part of our daily life and Library professionals are not exception to this. Thus we cannot avoid stress in our life; rather the best policy is to manage it properly to increase our efficiency. This article attempts to define stress in the light of Library profession. It describes about the types of stress in libraries and its reasons. Also critically analyses the best ways to manage the stress of Library professionals.

Key words: Library professional, Stress, Stress management

1. INTODUCTION

Stress management is the amelioration of stress and especially chronic stress often for the purpose of improving everyday functioning. Stress produces numerous symptoms which vary according to persons, situations, and severity. These can include physical health decline as well as depression. According to the St. Louis Psychologists and Counseling Information and Referral, the process of stress management is one of the keys to a happy and successful life in modern society. Although life provides numerous demands that can prove difficult to handle, stress management is the best way to manage anxiety and maintain overall well-being. More information is provided below on new definition of stress, learn about stress management models and practice techniques that will help to reduce stress and promote a positive lifestyle.

The library environment has changed drastically over the past few decades. With the development & application of information technologies, the library environment has shifted form the traditional library to computerized library, then automated library and more recently digital library. With such changes, the structure and nature of library & information science professionals has also changed in a dynamic way. The library & Information Science professionals experience stress as they readjust their lives with the changing library environment, job rotation, job promotion etc, the In adjusting to such changing library job environment, stress will help or hinder us depending on how we react to it.

2.1 Reason of stress

We live in stressful times. High demand levels load the person with extra effort and work.

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A new time schedule is worked up, and until the period of abnormally high, personal demand has passed, the normal frequency and duration of former schedules is limited.We are holding down two or more jobs in our life. We are putting up with heavy job loads and unreasonable demands. We are swallowing outrage and frustration with unfair situations .

2.2 Models

2.21 Transactional model

Richard Lazarus and Susan Folkman suggested in 1984 that stress can be thought of as resulting from an "imbalance between demands and resources" or as occurring when "pressure exceeds one's perceived ability to cope". Stress management was developed and premised on the idea that stress is not a direct response to a stressor but rather one's resources and ability to cope mediate the stress response and are amenable to change, thus allowing stress to be controllable.

In order to develop an effective stress management programme it is first necessary to identify the factors that are central to a person controlling his/her stress, and to identify the intervention methods which effectively target these factors. Lazarus and Folkman's interpretation of stress focuses on the transaction between people and their external environment (known as the Transactional Model). The model contends that stress may not be a stressor if the person does not perceive the stressor as a threat but rather as positive or even challenging. Also, if the person possesses or can use adequate coping skills, then stress may not actually be a result or develop because of the stressor. The model proposes that people can be taught to manage their stress and cope with their stressors. They may learn to change their perspective of the stressor and provide them with the ability and confidence to improve their lives and handle all of types of stressors.

2.22 Health realization/innate health model

The health realization/innate health model of stress is also founded on the idea that stress does not necessarily follow the presence of a potential stressor. Instead of focusing on the individual's appraisal of so-called stressors in relation to his or her own coping skills (as the transactional model does), the health realization model focuses on the nature of thought, stating that it is ultimately a person's thought processes that determine the response to potentially stressful external circumstances. In this model, stress results from appraising oneself and one's circumstances through a mental filter of insecurity and negativity, whereas a feeling of well-being results from approaching the world with a "quiet mind".

This model proposes that helping stressed individuals understand the nature of thought—especially providing them with the ability to recognize when they are in the grip of insecure thinking, disengage from it, and access natural positive feelings—will reduce their stress.

2.23 Stress & Management Technique

High demand levels load the person with extra effort and work. A new time schedule is worked up, and until the period of abnormally high, personal demand has passed, the normal frequency and duration of former schedules is limited.Many techniques cope with the stresses life brings. Some of the following ways induce a lower than usual stress level, temporarily, to compensate the biological tissues involved; others face the stressor at a higher level of abstraction:

Autogenic training
Cognitive therapy
Conflict resolution
Exercise
Getting a hobby
Meditation
Deep breathing
Yoga Nidra
Nootropics
Reading novels
Prayer
Relaxation techniques
Artistic Expression
Fractional relaxation
Progressive relaxation
Spas
Somatics training
Spending time in nature
Stress balls
Natural medicine
Clinically validated alternative treatments
Time management

3. HOW TO MANAGE STRESS IN A BETTER WAY

According to the American Institute of Stress (www.stress.org) there is actually **no single definition of stress** that everyone would agree on. Stress is a subjective feeling, what is stressful for one person may be pleasurable or have little effect on others and we all react to stress differently.

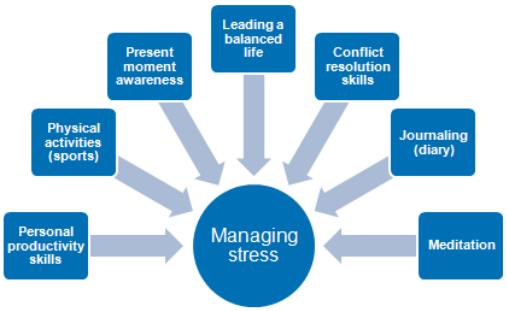
Stress Management is the ability to maintain control when situations, people, and events make excessive demands. What you can do to manage your stress?

What are some strategies?

If you are too stressed, you time management will suffer. Luckily there exists many ways and habits for keeping stress under control. For most people I highly recommend using at least a few of the below suggestions to **manage stress**.

Stress Management: Keeping Stress Under Control

At Time Management Solutions, we have a **7-way approach to stress management**. It consists of the following parts:



A diagram showing seven ways to prevent and cope with stress.

The techniques above all represent different approaches to the same thing. There is no single right or wrong way. They are all useful and you should use what works best for you.

Let's dig a little deeper to the different approaches.

3.1 Personal productivity skills and time management is what most of this site is about. When your productivity is on a level where you know that you perform efficiently at work, you will experience less stress. A good place to start exploring for more information is our section on Introduction to time management, if you aren't familiar with it yet.

From here on they are in some sort of a ease-of-implementation order:

3.2 Physical activities and doing sports is beneficial in many ways. Physical exercise releases built up tension. It also releases hormones that make you feel good. A fit body helps your mind to stay focused and it also can handle stress for longer physically.

Doing sports also forces you to be in the now, which makes it impossible to worry about stuff and things on your mind. This gives your mind a possibility to relax.

3.3 Journaling (writing a diary) is an excellent way of learning to know yourself better. It can also work more acutely; if something is stuck on your mind a good exercise is to write it down and just to discuss the matter in your diary for 10-20 min. You don't even have to come to a conclusion. Still it will calm you down. Read more about journaling for stress relief.

3.4 Meditation may to some of you sound esoteric. Nevertheless, I recommend trying it. You may also only use a relaxation CD (or mp3), which can easily buy on e.g. Amazon.com. Meditation calms down the whirlwind of thoughts in your head. The effect is immediate, and done regularly it will be even stronger. Regular meditation will result in a generally calmer you. But most of us never manage to do it regularly. Read more about meditation stress relief.

3.5Leading a balanced life is about having more than one important thing in your life that you value highly. You should not base your identity merely on your job, income, or family, because it is risky. Due to some unexpected event you could lose your "precious" and due to your one-pillar mindset that

would make you lose your identity too. In stead you should be living on more fronts than one. This also makes it possible to relate stressful things at let us say work, against a richer context of things in other ares of your life. Stressful things won't blow out of proportion.

Leading a balanced life also means that you don't have any harmful dependencies of alcohol, drugs or let's say food. Furthermore, it means that you sleep enough. Leading a balanced life is a broad concept, but I think you got the picture.

Conflict resolutions skills are one part of social skills. Many times stress and bad feelings are a result from social situations. *People problems*, as they say. In order to resolve difficult social situations you need to be able to face reality, the problem, and to lead difficult conversations. Your mindset should not be tuned for avoiding problems. To put it shorty, conflict resolution requires maturity.

4. TYPES OF STRESS IN LIBRARIES

The stresses can be divided into following types:

4.1. Mental Stress: The application of Information Communication Technologies has compelled the LIS professionals to acquire new knowledge along with the traditional library functions and services & job security, which has increased a considerable amount of mental stress among library professionals.

4.2. Situational Stress: The development and application of information technologies in libraries is create Situational stress for LIS professionals. Due to rapid change in computer hardware & software, obsolescence of existing hardware & software is a common phenomenon in almost all libraries. Further due to financial, technological constraints, it is difficult to keep pace with the changing technologies. Besides the change in information storage media, form print to electronic, then digital medias have resulted in the storage space facilities.

4.3.Physical Stress: The Digital Library has changed the physical structure of the job environment. Due to this sitting in front of computers for a log hour, working in air-conditioned environment etc have also creates the physical stress .

5. REASONS OF STRESS IN LIBRARIES

Stress can be derived from three sources such as physical, mental and situational. Physical stress can be brought on by overwork, lack of rest and poor diet. Mental stress can be traced to a persons' mental state of mind, which involves expectation, fears, regrets etc. Situational stress is derived form the interaction with the outer world like interaction with modern technologies, role as a library manager etc. During the past few years, libraries, like many other institutions, have been experiencing change at an accelerating rate. The digital library environment has exhibited a drastic change in the function & services of libraries. Accordingly the library & Information Science professionals have exposed to a considerable amount of stress in their day-to-day work. Different events which are responsible for stress factors are as discussed below.

5.1.Technological Change: The information and communication technology (ICT) is a fast changing phenomena. Accordingly the application of ICT in libraries is also changing at an alarming rate, which creates stress among library professionals.

5.2. Changing Library Environment: Many libraries have migrated from older manual system to automated systems and more recently to newer more sophisticated digital library systems. Staff members must unlearn old habits and procedures and learn to understand the new system .

5.3. Change in Type of Document: In addition to hard copy, most libraries are now acquiring at least some materials in alternative formats, such as CD-ROM or electronic documents or digital format. These materials, which were once handled on an ad hoc basis, must now be incorporated into the normal acquisitions workflow.

5.4. Change in Library Physical facility: Problems or changes in physical facilities have become a vital problem in today's libraries. With the increased use of electronic formats, the library authorities are reluctant to expand facilities to cope with increasing space requirements. Some libraries are actually moving into new facilities with less space or losing space to other functions. But the hybrid type of libraries having both print and non-print documents face much problems relating to change in physical facilities of the library.

5.5. Changing users demand: With the development of various micro subjects, information explosion, time bound academic programmes etc users attitude towards pin pointed information have changed. Accordingly the acquisition, organization and retrieval of information in quickest possible time have given a tremendous amount of stress in the mind of library professionals.

5.6. Reduce staff strength: Restructuring, layoffs, loss of staff positions, and doing more with fewer people have become increasingly common which has been a source of stress with the increasing workload. . Further problems such as illness, disability, or death of a member of the library community have a growing impact on co-workers.

CONCLUSION :

Due to development & application of information technologies, LIS professionals are faced with constant change & challenges in their working environments. With such changes, the structure and nature of library & information science professionals has also changed in a dynamic way. LIS professionals experience stress as they readjust their lives with the changing library environment, job rotation, job promotion, new user's expectations, etc. LIS professionals have to manage and control the events that impact their work and produce stress, or to allow stress to manage them.

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Application of ALICE for Windows in Al-Barkaat Institute, Aligarh, U.P.

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ABSTRACT

The development of automation process is gaining momentum in all the libraries of India.It is increasingly becoming the means for effective library management, quality of information service, efficiency of information retrieval and circulation of library material. Today different institutions of the country select and use automation software package which can cater the needs of their particular library more effectively. The present article discusses the application and use of one of the leading automation software 'Alice for Windows' used by AL-Barkaat Institute, Aligarh revealing many finding related to the use and application of the software in the institute libraries.

1. INFORMATION TECHNOLOGY: AN OVERVIEW

The term "Information Technology" is most commonly used to mean a combination of computer and other technologies as various means of obtaining, storage, retrieval, and dissemination. Information technology holds the key to success in modernizing information services, which ensures not only new ways of information handling but also changed the ways of providing services to user communities**.** Information technology helps people to eliminate drudgery in routine work. It introduces speed, flexibility and control to formerly slow, repetitive and rigid procedures. Developments in IT removed four major constraints that were formerly limited to the human activity – the constraints of carrying out complex calculations, the constraints of storing and retrieving the masses of data, the constraints of performing meticulous routine tasks with absolute accuracy and constraints of geographical distance. These marvelous capabilities of IT offer many advantages to librarians at their workplace especially in carrying out tasks, which were previously, either impossible or enormously difficult. IT provides a new set of alternatives for collecting, organizing and disseminating information effectively and expeditiously.

2. LIBRARY AUTOMATION

In India library automation was started in the late 1980s. The term "Library automation" refers to the processing of certain routine functions in library with assistance of computers. Library automation is the use of automatic and semi automatic data processing machines to perform such traditional library activities such as acquisition, cataloguing, and circulation. Library automation may thus be distinguished from related fields such as information retrieval, automatic indexing and abstracting and automatic textual analysis**.** In the recent years the advent of micro computers and many application software packages have made the information professionals to switch over to automate their library routines.

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Thus a large number of libraries in the world have automated one or more of the functions such as acquisition, circulation, and cataloguing, serial control through the use of a number of library automation software packages available in the market .
For the present study, application and use of Alice for Windows library automation software package in AL-Barkaat Institute, Aligarh has been studied.

3. ALICE FOR WINDOWS

Alice for Windows is a complete and integrated package developed in Australia by Soft link International ,marketed worldwide through a number of agencies based in America, Australia, Britain, Iceland, India, New Zealand, OASIS in south east Asia and Annie in America and other part of the world. At present it is used in 17,000 libraries in 85 countries all over the world including India. In India it has 250 installations. It is marketed by M/S soft link Asia Pvt. Ltd.

4. FUNCTIONS OF ALICE FOR WINDOWS

Brief description of the key modules of Alice for Windows (AFW) are as under:

4.1 Acquisition Module-It is designed to assist the librarian with: Budgetary control of purchases (resource and general library expenses), production of orders, processing of items received, recording of suggestions and requests onto a "wish list", orders and requests to suppliers, lists of resources purchased from a budget dissection, claims for late orders, budget reports, and wish list reports and "on approval" reports are all available

4.2 Management Module- Management module of AFW facilitates the cataloguing of a wide variety of material including computer files, websites, video and audio recordings etc. AFW automatically generate the keywords and see & see also references for catalogue search to the user. The management module also facilitates a wide range of reports related to cataloguing such as shelf list, catalogue cards of different types etc. Maintenance of authority files like author, publisher, place of publication, subject is also possible in the management module.

4.3 Circulation Module- Besides check out and check in the circulation module of AFW also allows resources to be booked, renewed and recalled. This module provides a wide spectrum of reports useful for the manager of the library, the circulation staff as well as users. Reports about the active borrower and most used resources can also be generated

4.4 Periodical Module-Generate a list of expected issues and calculate the expected arrival date of each issue. Each issue received is accessioned and may be circulated. Any missing or overdue issues are displayed and a claim may be printed automatically for the supplier. A circulation list is maintained and printed automatically for circulating newly arrived issues to users. Each journal or each issue if required becomes part of the main catalogue, thus increasing access through the Inquiry module.

4.5 Journal Indexing Module - Index individual journal articles that can then be accessed by library users from Inquiry. Individual article information may be recorded and multiple subjects can be added along with scanned images and extensive notes. Words in the notes can be tagged as keywords. The library user, when conducting a search in Inquiry, can access journal information entered by the librarian. Any articles that are not held by the library may be requested from the

OPAC, if this function has been authorized by the librarian. If the library uses the Periodicals module then the location and availability of an article are also displayed.

4.6 Inquiry Module-AFW in the form of Inquiry module provides a powerful, yet easy-to-use, search interface to locate items in the library collection.It provides the user with many search options like search through author, title, subject, ISBN, keywords, accession number, call number, barcode, publisher, place of publication, series, topic, curriculum areas etc.

5. REVIEW OF RELATED LITERATURE

The advances in information technology has forced the libraries to react to the changing environment. The libraries are struggling to absorb innovation and to recognize the implications and meanings of transformation. Now modernization has largely run its course and libraries are moving towards automation. Several libraries are today automated through the use and application of a library automation software package selected from amongst the number of software packages available in the market. Consequently, many studies have been conducted about the different library automation software packages used by various libraries of the world. The study of Ekpenyong made under the title 'Automating a large library in Nigeria: the story so far' and the study conducted by Foot under the title 'Automating the British library: a case study in project implementation' deals with development and implementation of library automation system in Ibadan Library, Nigeria and British Library at St. Pancras respectively but did not discussed about any particular library software package used for the purpose of automation. The study by Shabahat and Mehtab in their work 'Library automation software packages in India:A study of the cataloguing modules of Alice for Windows,Libsys and Virtua ' provides a good overview of the salient features of cataloguing module of the three packages and their acceptability in a developing nation.Another study of Shabahat and Mehtab in their work 'Online Public Access Catalogue:A Journey to Alice for Windows,Libsys and Virtua' evaluates three important library software packages in the context of OPAC module.However,both the works were restricted to cataloguing module and OPAC only.A paper presented by Chowdhury and Chowdhury under the title 'Text retrieval and library management software in India' highlights the present Indian Scenario by a brief overview of 10 selected indegenous packages namely CDS/ISIS ,LIBRARIAN ,LIBSYS ,MAITRAYEE ,NIRMALS ,SANJAY ,TULIPS ,and WILISYS.Similar was the paper presented by Patel and Bhargava under the title 'Comparative study of software available in the Indian markets' and the paper presented by Saxena and Shrivastava under the title 'Evaluation of library sofware packages available in India'.All the papers presented gave an overview of the library automation software packages used in the country as a whole but was not a detailed study of the use and application of the softwares in any particular library.However the work by Mehtab and Amita titled 'Awareness and use of OPAC in five Delhi libraries' was a detailed case study of the five libraries of Delhi but this work did not studied any particular automation software rather it was limited to the applicability and utility of OPAC in general.The work of John and Varghese titled 'Comparative evaluation of functional performance of Libsys and Alice' deals with the evaluation of

the performance of Libsys and Alice for Windows based on the users response.This work is closely related to the present work but the work is not based on the response of the users of any particular institution or library rather the response is collected from differetnt libraries of the country.The present work is a detailed study of the application and use of all the modules of Alice for Windows in AL-Barkaat Institute.It is an attempt to fill in the gaps of previous studies and to provide a focussed study of Alice for Windows and its utility and importance in improving the backbone of the library in practice.

6. INSTITUTIONAL PROFILE

6.1 AL–Barkaat Institute-Al–Barkaat Institute aims to establish and administer educational institution under the rights and duties as provided under article 30 of the Indian constitution. Al – Barkaat educational society dedicated to the memory of the renowned Persian-Hindi Sufi Poet Syed Shah Barkatullah of Marehra (Distt. Etah, U.P.), established Al–Barkaat public school and Al–Barkaat Institute of Management Studies. Al- Barkaat Institute of Education was also started after the success of management Institute. The institution has all up – to – the – minute facilities, such as spacious classrooms, state of the art computer labs, on campus hostel accommodation, seminars room, conference hall, indoor and outdoor games facilities, canteen, gymnasium etc. The role of Al-Barkaat Institution is to impart quality management education to equip young men and women of our country with knowledge, skills and a positive attitude to help them to make a meaningful contribution to the economic well being of the country.

Al-Barkaat campus is spread over more than one lakh sq. yards of land, in close vicinity of Aligarh Muslim University. The magnificent building of the Institute launched the management programme during the session 2004–05.The Institute attempts to maintain a healthy blend of theory and practice with industry-academia partnerships by organizing Conferences & Workshops and arranging Industrial Visits. The teaching methodology focuses on 'Learning by Doing'. Hence, case studies and management games form an essential component of their curricula.

6.2 AL-Barkaat Libraries

All the libraries of Al-Barkaat are using Alice for Windows library automation software. AFW efficiently and effectively assists in the management and control of library. It performs all the functions require in a library system. Alice is reliable and proven product. Over the last twenty-five years, it has grown and achieved the status of leading library automation software of the world.

6.2.1 Al- Barkaat Institute of Management Studies Library: an overview-

Al–Barkaat Institution of Management Studies Library has rich collection of books of Indian and International publications & has excellent collection of Encyclopedias, latest Journals (The Economist, Harvard Business Review, Vikalpa, Decision, IIMB Management Review, etc.), Magazines, and Newspapers. It has a wide collection of Project Reports and Case Studies. Significantly, the library maintains e-resources and has a digital library on GSDL, which can be accessed by any terminal in campus. Along with this, library has subscribed some online journals also.

Library Collection: Management studies library has more than 10,000 books; In addition to books, the library has other resources such as bound volumes of journals, projects, reports and e-resources.

Library Services: ABIMS Library is providing the Circulation, Reference service, Current Awareness Service, Reprographic Service, Audio-Visual Service, OPAC, E-mail, Internet, CD-ROM Database, Inter-Library Loan Book Bank Services to its users

6.2.2 Al- Barkaat Institute of Education library: an overview-The library is the heart of every educational institute, which breathes knowledge and information into the minds of the students. The Al-Barkaat Institute have a well equipped library for each section of the institution with an elaborate collection of books, journals, project reports, Audio-Video materials and other resources to serve its users. Its libraries are fully automated and use barcode technology to issue and return the books with the help of Alice for Windows library software. The library aims at providing timely, reliable and comprehensive information on the contemporary and topical sphere pertaining to multifarious aspects of knowledge.

Library Collection of Education library: Education library has around 4000 books in addition to journals, AV-Materials, CD-ROMs, Charts etc.

Library Services: Salient services provided by the different libraries are Circulation, Reference Service, Current Awareness Service(CAS),OPAC,E-mail and Internet, CD-ROM Database, Inter Library Loan and Book Bank.

6.2.3 Al- Barkaat public School library-The school has a well established & spacious library. The library has on its shelves a large number of text books, story-books, encyclopedias, reference books and books on moral values and general knowledge in English, Hindi and Urdu. The library has regular subscription to competitive examination magazines such as Science Reporter, Competition Success Review, along with national/local newspapers. The students avail the library facilities through the library membership card valid for one academic year. The library is fully automated with barcode technology for the issue and return of books using Alice for Windows Library software.

7. DATA ANALYSIS AND INTERPRETATION

Data analysis and interpretation has been completed in two parts.The first part deals with the analysis of application of software in libraries of AL-Barkaat Institute whereas the second part deals with the use of software by the users of AL-Barkaat Institute.

PART-1 Application of Software

Modules supported by software: The investigator has interviewed the staff of all the libraries of AL-Barkaat in order to know the modules used in different libraries. It was revealed by the staff that all the standard modules of AFW are in use in all the libraries. These modules are as follows:

Acquisition
Management
Circulation
Periodical
Journal Indexing

Features of Acquisition module in use: Most of the features of acquisition module i.e.

wish list, accessioning, reports and statistics, receiving feature, fund accounting are in use in the libraries of Al–Barkaat Institute. Some of the features of acquisition module such as claiming, payments and bill processing are not in use in the libraries because finance management of libraries are in the hands of higher authorities of Al–Barkaat Institute.

Features of Management module in use: Most of the features of management module i.e. barcode generation, statistics, reports, and authority file generation, catalogue card generation feature are in use in the libraries of Al – Barkaat Institute. Some of the features of management modules such as union cataloguing are not in use in the libraries because libraries of Al – Barkaat do not have any provision of networking in the Institute. Maintenance of thesaurus is not in use in the libraries. So the authority should pay attention towards it.

Features of circulation module in use: Most of the features of circulation module i.e. book charging and discharging, renewals and recalls, fine, updating patron file, reservation feature are in use in the libraries of Al–Barkaat Institute. Most of the users do not have an e-mail id so e- mail reminder and reservation are not much in use.

Services provided by library: Most of the services are provided by the libraries to its users. Circulation service is provided by all the three libraries of Al–Barkaat Institute. Inter library loan is provided by Library of Management Studies and Library of B.Ed Department only. Ready Reference Service is provided by Library of Managent Studies and Library of Public School only. Whereas Reprographic Service is provided by Library of B.Ed Department and Library of Public School only. Significantly, SDI service is not provided by the libraries of Al–Barkaat Institute because these services are mostly provided to special kind of users such as scientists, research scholar's e.t.c.

Staff Perspective about Alice for Windows: All the staff feels that AFW database is secure, software is user friendly, periodical updates are provided promptly, trouble shooting is easy in this software and the vendor is prompt in redefining problems.

PART-2 : Use of Software

Table – 1 : Response rate of all users

Population	Questionnaire distributed	Returned back	Total %
Students of MBA	115	98	85%
Students of B.Ed	115	92	80%
Faculty Members	20	10	50%

It is evident from table 1 that the response rate is better in case of students but unfortunately only half of the faculty members filled up the questionnaire. The rest of the faculty members were busy and were not able to spare time.

Table-2 : Frequency to visit the library

S. No.	Frequency	Management studies	B.Ed	Faculty members	Total %
1.	Daily	60 (66.67%)	31(34.44%)	5(50%)	50%
2.	Weekly	12(13.33%)	21(23.33%)	3(30%)	18.99%
3.	Fortnightly	15(16.67%)	30(33.34%)	2(20%)	24.82%
4.	Monthly	3(3.33%)	8(8.89%)	-	5.79%

Data in table 2 reveal that among the daily users, the students of Management

Students top (67%) followed by Faculty Members. Surprisingly, only 35% of the B.Ed students visits the library daily. Investigator have found that a substantial number of management students visit the library to read magazines subscribed by the library related to their subjects. On contrary, magazines related to education are not available in the library and whenever the students of B.Ed visit the library, the main purpose is to either to issue the book or return.

As far as faculty members are concerned, a large number of faculty members visit the library daily for newspaper reading.

The other categories such as weekly, fortnightly and monthly visits are related with issue and return of the books and consulting library resources.

Table – 3: Automated library consuming less time than traditional library

Response	Students of Management Studies	Students of B. Ed	Faculty members	Total%
Yes	**70 (77.78%)**	**67 (4.44%)**	**7 (70%)**	**75.78%**
No	**20 (22.22%)**	**23 (25.56%)**	**3 (30%)**	**24.21%**

Data in table-3 shows that the majority of the users (75.78%) are in the side of the statement that automated library is consuming less time than traditional libraries but few users (24.21%) do not think so because they don't know the benefits of automated library.

Table – 4: Frequency of use of OPAC

S. No.	Frequency	Management studies	B.Ed	Faculty members	Total %
1.	Daily	3 (3.33%)	4 (4.44%)	2 (20%)	4.73%
2.	Twice a week	43 (47.78%)	24 6.67%)	6 (60%)	38.42%
3.	Fortnightly	16 (17.78%)	16(17.78%)	1 (10%)	17.36%
4.	Monthly	28 (31.11%)	46(51.11%)	1 (10%)	39.47%

Table 4 indicates the frequency of using OPAC by the users. Most of the users (39.47%) of Al-Barkaat Institute use the OPAC monthly, 38.42% user use twice a week, 17.36% users use it fortnightly and 4.73% use OPAC daily. Response rate makes it clear that very few users are using OPAC daily, which means that they are not much skilled for using it.

Table – 5: Use of access point in OPAC

S.No.	Access point	Management studies	B.Ed	Faculty members	Total %
1.	Subject	24(26.67%)	5(5.56%)	2(20%)	16.31%
2.	Title	33(36.27%)	28(31.11%)	7(70%)	35.78%
3.	Authors	29(32.22%)	46(51.11%)	1(10%)	40%
4.	Any other	4(4.44%)	11(12.22%)	0	7.89%

Data in table 5 shows that 16.31% users of Al–Barkaat Institute search OPAC through subject, 35.78% users search through title, most of the users (40%) search through authors and (7.89%) users are using other access point for searching the material of the library. It becomes clear that they are more familiar with the authors of their required material rather than other access points.

Table – 6: Search strategy used in OPAC

S.No.	Access point	Management studies	B.Ed	Faculty members	Total %
1.	Simple search	46(51.11%)	65(72.22%)	5(50%)	61.05%
3.	Complex search	41(45.55%)	15(16.67%)	4(40%)	31.07
4.	Any other	3(3.33%)	11(11.11%)	1(10%)	7.88%

Table 6 depicts that most of the users (61.05%) of Al–Barkaat are using simple search for retrieving required material, 31.07% are using complex search, and 7.88 % are using other search methods. Maximum number of users prefer simple search because they don't have knowledge of other search stratetegies.

Table – 7: Problem faced while using automated library

S.No.	Problems	Management studies	B.Ed	Faculty members	Total %
1.	Lack of training	26(28.89%)	15(16.67%)	6(60%)	24.74%
2.	Lack of knowledge	29(32.22%)	51(56.67%)	2(20%)	43.16%
3.	Non cooperative attitude	15(16.67%)	8(8.89%)	2(20%)	13.16%
4.	Any other	20(22.22%)	1617.77%	0	18.94%

Table 7 shows that majority of the users (43.16%) face problem due to lack of knowledge in using automated library,24.74% of the users face the problems due to lack of training and 18.94% of the users face the problem because of non cooperative attitude of staff .Thus it is clear from the table that majority of the users face problem because they don't know how to use automated library and derive benefits from it.

Table – 8: Behavior of staff

Response	Students of Management Studies	Students of B. Ed	Faculty members	Total%
Yes	74(82.22%)	70(77.78%)	6(60%)	78.94%
No	16(17.78%)	20(22.22%)	4(40%)	21.05%

Data in table 8 depicts the satisfaction of users about the staff behavior. Data indicates that out of 190 respondents 78.94% expressed their views that the behavior of staff is satisfactory and only 21.05% of respondents expressed that the behavior of staff is not satisfactory. Response makes it clear that the staff of the library provide them full assistance in using library resources and services.

Table – 9: Level of satisfaction with services

S. No.	Levels	Management studies	B.Ed	Faculty members	Total %
1.	Satisfied	65(72.22%)	54(60%)	4(40%)	64.73%
2.	Fully satisfied	20(22.22%)	9(10%)	3(30%)	16.84%
3.	Partially satisfied	5(5.55%)	18(20%)	2(20%)	13.15%
4.	Not satisfied	-	9(10%)	1(10%)	5.26%

Data in table 9 depicts the level of satisfaction derived by the users from the services provided by automated library. Data indicates that 16.84% of respondents are fully

satisfied,13.15% are partially satisfied, 64.73% are satisfied whereas 5.26% are not satisfied. A large number of users are satisfied with the services provided by the library but the not satisfied users stated that the collection on their subject of interest is insufficient and the library do not subscribe journals related to their interest.

Table – 10
Requirement of training

Response	Students of Management Studies	Students of B. Ed	Faculty members	Total%
Yes	64(72.28%)	84(93.33%)	8(80%)	82.10%
No	20(22.22%)	6(8.67%)	2(20%)	16.73%

Table 10 depicts that a large number of respondents 82.10% feels that training is necessary for the effective utilization of automated library whereas 16.73% respondents do not feel the need of training because they have knowledge of information technology. Users opined that library should provide them training so that they can use automated library without the assistance of staff.

8. FINDINGS, CONCLUSION AND SUGGESTIONS

This study sought to examine the "Use and application of Alice for Windows, library automation software in Al- Barkaat Institute, Aligarh. Most of the objectives of the study are met satisfactorily and most of the library professional thinks that automation software is essential for performing all the functions of library.

8.1 FINDINGS

1) It is worthy to mention that advanced level of AFW modules like multimedia. self check out, book hire etc have not been purchased by any of AL-Barkaat library. Nevertheless, all the surveyed libraries are using five standard modules namely Acquisition module, Management module, Circulation module, Periodical module and Journal Indexing module
2) Further most of the features of acquisition module are in use in the libraries.
3) The study indicates that maximum number of features of management module are in use in the libraries of Al–Barkaat Institute.
4) The study finds out that maximum numbers of features of circulation module are all in use.
5) The study reveals that some features of serials control modules are in use in these libraries
6) 95(50%) users visit the library daily.
7) 100 (52.63%) users was aware that their library is using standard library automation software for performing routine functions of library.
8) Majority of users 153 (80.52%) think that automated library is more convenient than traditional library.
9) Majority of the users 131(68.94%) are using circulation services rather than other services provided by the library.
10) Most of the users 144 (75.78%) feel that automated library is less time consuming than traditional library.
11) Majority of the users 106 (61.05%) prefer simple search, very few user use complex n search.

12) Most of the users 150 (78.94%) opined that the behaviour of library staff is satisfactory.
13) A large number of users i.e. 82 (43.15%) face problem while using automated services due to lack of knowledge regarding the automated library. Hence these users feel that training is essential for using automated library services.
14) The study finds out that a large number of users i.e. 113 (64.73%) are satisfied with the services provided by the library.

8.2 SUGGESIONS-

In the light of the result of the study following suggestions are made:

1) There is a need to train the users to acquire basic skills in using automated library. It is suggested that there should be full time assistance of library staff to users. Some orientation programs should also be conducted in the library so that the users can be trained about using different services to put the library services and resources to optimal use.
2) The library should conduct seminars, conferences, workshops and exhibitions in order to update and impart IT knowledge to the students.
3) Number of terminals in the library should be installed.
4) There is one suggestion from the user's side to subscribe more journals in their discipline.

8.3 RECOMMENDATIONS FOR FURTHER RESEARCH-

Based on the findings of the present study the following suggestions are made for further research.

1) Similar studies can be conducted in other institutes of Aligarh.
2) A comparative study can be conducted between two or more institutes.
3) A comparative study can be conducted on the two universities using different software's.

8.4 CONCLUSION

History has repeatedly shown that a new technology completely replace another. The advent of computer technology reduced drudgery works of traditional libraries in a very effective and efficient way. It simplified, organized and enhanced the resources and services of libraries. Hence introduction of library software's provide new ways to achieve maximum utilization of services and resources. Against this background, the present study has been conducted selecting one of the prominent institutes of Aligarh namely Al–Barkaat. This institute has been using one of the widely used library automation software package all over the world. Selection of the software shows that institute has a vision to improve library as the backbone of the institute. It was also found that most of the modules of AFW are in use in the libraries of Al – Barkaat. Moreover, the significant features of the software are also in use to provide better services to the users.

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Grey Literature: A Valuable Untapped Stockpile of Information

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Abstract:

Each piece of information irrespective of its origin, language, script, publication, accessibility, is very vital to support the life on earth. Information in present day world is available in different forms but still there is one form which despite being the most conventional is still the most unorganized and untapped pool of information. Importance of this primary source of information is no way less to any other form of information, what we call as Grey Literature. Even this gray literature becomes white without people actually realizing its origin. The present paper lays emphasis up on the importance of Gray Literature, its untapped potential and the various ways and means by which this huge stockpile of information can be channelised into mainstream to maximize its exploitation to help contribute significantly in growth and development of any country in every sphere of human activity.

Key words: Grey Literature, unorganized stockpile, White Literature, Metadata, Copy-left

1. GREY LITERATURE:- A good number of scholars have already written and talked about Gray literature, the term most of the time has either been misunderstood or least understood. Perhaps up to recent past no general consensus could be developed to make the term acceptable in most convenient way, as what should one understand from the term Grey literature? The most common consensus we could not be able to make about Grey Literature is in its spelling as should we spell it as **Gray** or **Grey literature.** This in itself perhaps reflects the beauty of gray literature that we can enjoy a good amount of freedom and liberty in its use.

Professionals from both in and outside the Library and Information Science have defined Grey literature variably perhaps to suit their requirements. According to M.C. Debachere grey literature is frequently original and usually recent [1], this includes, white papers, preprints, technical reports, conference and seminar papers, working papers, manuscripts, etc. mostly because of them not being available through conventional channels. [2]. From above definition we can say Gray literature refers to papers written by hundreds and thousands of people all across globe but remain wanting for not being available through conventional means. On one hand, we can say grey literature includes that research outcome which does not find place in reputed and quality Journals or magazines despite having quality stuff to help explore some new areas or simply supporting the already established facts. At the same time, it includes that material which is produced by various agencies at individual level in both electronic and print format to meet their information requirements but is not freely available to public for the want of not being made available through conventional commercial publishers especially by agencies like government, business and other research industries.

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According to Luxembourg definition, grey literature is something, which is beyond the control of commercial publishers, as these documents are ephemeral, non-conventional or underground in nature [3] and according to U.S. Interagency Gray Literature Working Group, grey literature mostly do not transgress through publication, bibliographic control, distribution or acquisition by sellers, distributors or agents [4]

Charles P. Auger's is considered as the first person who worked on tapping the potential of grey library by publishing his landmark work on grey literature in 1975 [5], but the term grey literature got promoted in the second edition of his book (Auger, 1989) [6]. Keenan in 1996 described semi-published material as grey literature [7].

From the above definitions we can conclude that, grey literature is published in the form of reports (technical & non-technical) papers (pre & post-prints) white papers mostly by govt., or any other type or kind of document produced by governmental agency, academic institution, business house, Industry, or any other research organization without actually being indexed or distributed by commercial publishers.

Gray literature generally includes theses, technical reports, research reports, conference proceedings, trade literature, pre-prints etc. government publication like, project reports, village and town reports, tribal study reports, committee reports, reports on diseases, war, crime etc. at different levels. Other forms of Gray Literature are Fact sheets, Standards, Patents, Working papers, Business documents, Newsletters, Symposia, Bulletins and unpublished works etc. [8] make it to be called as Gray Literature (GL).

Grey Literature" is of scientific or technical nature available in both electronic and printed format with no bibliographic sources [9]

2. ORIGIN OF GRAY LITERATURE: - Generally, in Gray Literature, information is very specific as it mostly addresses a particular problem hence remains mostly silent as the same subject may not be of far interest to a widespread user community but definitely, the information in it possesses everything of research importance. Looking back at the origin of the term gray literature there is no consensus on it, but more recently, it is being accepted as the term emerged lately in a seminar in New York, 1978[10]. It is believed that gray literature is equally important for research and development as any other conventionally published information or document. The reason is perhaps also justified being their not being firstly easily available in the market and secondly not being published in conventional form because of their nature.

Gray literature as we know is created rather produced at different levels of business, academics, government, industry in various forms including print and electronic. Gray literature is not easily accessible or commercially published as is the case of other conventional documents. Publishers all over the world need to give a second thought about the abundance of valuable source of information available but untapped.

Going by the fourth international conference on Grey literature held in Washington, in October 1999, the term Grey literature came to be known as produced in both print and electronic format at all levels of govt, Industry, Business, Academics etc. having no control by commercial publishers. [11]

According to Weintraub, Grey literature offers a comprehensive view of topic irrespective of the nature of viewer covering facts, Statistics or other data. Weintraub further believes that grey literature will enjoy more importance in future than what it is enjoying today. [12]

2.1 Grey literature is not generally found through the standard indexing sources.

2.2 Grey literature encompasses different types of materials and publications.

2.3 Grey literature is non-conventional and ephemeral in nature.

2.4 The reference value of GL is hardly appreciated even by funding agencies.

Grey literature generally includes following type of material and may include some other type of material as well: Reports (technical, statistical, Progress, state-of-art, Market research etc), pre-prints, theses and Dissertations, Conference proceedings, Standards and Specifications, Non-commercial Translations, Bibliographies, Govt documents, Newsletters (White Papers, Reports, etc.) [13]

Keeping in view the nature of the gray literature it has been generally found that professionals engaged in tapping this kind of information source find it difficult to acquire, collect, pile up and finally to make use of it. This difficulty has different face also as has been observed at New York Academy of Medicine where there has been great demand of gray literature by public health and health policy researchers. Libraries of the late have started capturing grey literature and after giving technical treatment, it is put to use.

3. ATTRIBUTES OF GRAY LITERATURE:-

2.4 Grey literature typically is most of the time objective in nature and consists of research documentation and by virtue of its nature (since not being refined and polished) is regarded as dull and dismal.

2.5 Gray literature is not peer reviewed; peer reviewing of gray literature will definitely help it in establishing as white literature.

2.6 Usually gray literature is unstructured, unauthorized acquired mostly from one or two sources hence is regarded as aid to specific problem.

2.7 GL has got every attribute of being an Intellectual Property

2.8 Some grey literature is indeed magical in providing an organization with a wealth of knowledge for problem solving, strategy inspiration or know-how

2.9 Generators of Gray Literature generally make limited and specific use of it.

4. Different forms and types of Grey Literature

4.1 REPORTS:- Normally it has been observed that primarily writing a report is not a difficult task but putting things or pieces of information or knowledge which has been already put forth or established in most effective manner is where actually the key lies. Main aim of the report writing is to make the already established fact more people/user friendly in understanding the concept with out changing the semantics of the fact or idea.

4.1.1 Reports may either be technical in nature or purely non-technical depending upon the evaluation of the kind of idea or concept.

4.1.2 Presenting a report in the most presentable way is also the area which deserves, due attention as most of the time a dull presentation may take the toll of a well-established and admirable fact.

4.1.3 A report worth reading is always going to contribute in furtherance of that very concept in evolving a new idea. A primary source of information is not always a polished idea; a good no of critical appraisals will definitely help in making it an acceptable fact.

4.1.4 Report should always be preferably written by the person, actively engaged in the concerned areas of interest and should be arbitrarily tried with the mere intention of either meeting the dead line or simply completing the formality.

What is more important is the written account should be readable, as has rightly been said by Anthony Trollope that, 'of all the needs a book has the chief need is that it be readable.

4.2 GOVERNMENT DOCUMENTS Gray literature is also produced in abundance by government agencies, but the irony is that these publications most of the time remain wanting for the sake of attention. People who need it most can in fact exploit this information in best possible way so that common masses be benefitted of this huge information.

White paper: - The abundance of grey literature produced by govt and its agencies is mostly in the form of white paper. White paper is said to be the most authoritative and reliable information, produced by various agencies of govt, mostly for planning and decision making. White papers are often required by business establishments, technical fields, research organizations, and of course by politicians for debate in house. White papers produced by research organization, universities etc are always in great demand for their direct bearing on social setup.

4.2.1 Government agencies with the help of private partnership should always try to make efforts to put this huge valuable information to use.

4.2.2 Agencies can identify the producers and consumers of such information who better can route this information in helping out establishing new facts.

4.2.3 Develop efficient information and knowledge management among the publishers of this information is imperative in view of assessing, as whether the same is being put to use rather consumed by the target group or not.

It is equally the job of all publishing agencies of government to find their target group as mere publication of such information does not mean the job is done, but should also ensure that it is being used or put to use by other cross sections of society. This will automatically help in making judicious and exhaustive use of information produced by various agencies of govt. and its then we can say a judicious use of publication of information is being done.

4.3 CONFERENCE, SEMINAR AND WORKSHOP PROCEEDINGS: -Seminars, Conferences, Workshops, Symposia etc. is almost a day-to-day affair, and on average, it has been observed that daily on every major subject entity or on interdisciplinary

basis in one or the other corner of the world something like this keeps on going. Some call for papers and publish them in proceedings, others may simply come and deliver lecture which remains untapped hence a great lose to user community. Some conference may only publish abstracts only and many publish nothing at all. For this, in every such intelligent confluence, proceedings for its worth definitely need to be

4.3.1 Recorded cum published
4.3.2 Maintain database of papers presented.
4.3.3 Author name and key words of papers can act as a ready reference
4.3.4 Quality papers, which may be deemed worth value, can be recommended for publication in various journals, as this in itself will help increase the viewership and application of findings.
4.3.5 A database of future conference can be maintained for furtherance of information and knowledge by refining the already conceived ideas in the form grey literature and can be helped out in becoming white literature with the passage of time.

4.4 TECHNICAL REPORTS: - All types of institutions and organizations normally generate technical reports; government agencies produce a major portion of it and are primarily distributed within professionals circles. Similarly, private and public sector agencies like MNC's, corporate houses, R & D Institutions, public sector companies are no way left behind and they do have a substantial share in producing the technical reports. These may be published in the shape of article, write-ups, critical notes etc in various in house publications, which most of time remain available in the institutional repositories.

Technical reports do carry necessary information like, Author, Title, Number, Series etc. that may vary considerably depending upon the formats adopted by different agencies.

Some examples of major U.S government sources along with there numbering system are

Environmental Protection Agency (EPA) ,EPA/600/S2-86/051 (EPA)
National Institute of Standards and Technology (NIST, formerly the National Bureau of Standards, NBS), PB95-187282 (NTIS accession number
Department of Defense (DoD), AD-A417298 (DoD report)
Department of Energy (DOE and its predecessors the AEC, ERDA, etc.), SAND-83-2301/2 (DOE report)

At present nearly 100,000 scientific and technical reports by the US Departments of Energy, Defense, Environmental Protection Agency and the National Aeronautics and Space Administration have been integrated at GrayLIT Network [14].

Technical reports are mostly scientific in nature mostly depicting the progress of a research project. These reports are also aimed to confirm the results if obtained during the course of investigation. As said technical reports like other grey literature is not published by commercial publishers but is distributed by organization itself to review the progress for various purposes.

4.5 THESIS AND DISSERTATIONS: -Institutions of higher learning are actually the greatest producers of grey literature. Research is one of the main activities of these

institutions. Most of the research work produced in these institutions remains shelved on stacks in libraries, as such the benefits which society in general should be able to reap from it is not able to do so. Most of the research work in universities is recorded in the form of thesis and dissertations or even in the form of projects works, which is purely based on original research work undertaken by students at various levels. Research work is in these institutions is undertaken at Bachelors, Masters, M.Phill and Ph.D level. The amount of literature produced by these institutions is purely primary in nature and is not produced by commercial publishers.

4.6 PRE-PRINTS:- Extension of research work is mostly seen in the form of publications of one or the other sort, but the most common, which receive acceptance among scholarly community, are those, which are objective in nature, evidence based, verified, tried and tested and are duly accepted for publication. The publication part of a research work goes through review process among peers to ascertain the authenticity and reliability of the piece of information produced what we commonly known as preprints. Preprints are as such those articles, which have not yet undergone through peer review. A general notion about the pre and post prints is that, a pre print is an article, which in a sense is complete but yet to be published, and a post print is an article, which after being peer reviewed is published in journal. The Open Access community characterizes **pre-prints** as the papers **before peer review** and **post-prints** as the paper **after peer-review**, with revisions having been made [15]. There is always a huge pile of pre-prints available with various scholarly communities, which still has to cover the course to become white from grey. It is always the timely dissemination of information, which actually makes this important stockpile of information as grey, because these publications are rendered as grey before review in the form of pre-prints and white after review in the form of post prints.

4.7 MANUSCRIPTS: - Manuscripts is the first and foremost form of grey literature. When the means of printing and publishing were not in practice the only form people used to record their intellect was in the form of manuscripts. Still if we take a look around us we will find hundreds and thousands of such manuscripts but for the want of multiple copying same suffers for use. There are libraries were the manuscripts recorded on papyrus sheets are still preserved. Digitization of manuscripts by Govt of India and various other Govts world across is there only to help people reap the benefits of such grey literature. In India Khuda Bhaksh Oriental Public Library, Patna having nearly 21000 Oriental manuscripts is one such institution, devoted to collection, preservation and organization of manuscripts. The digitization of about 1200 manuscripts of the Library was started in September 2005[16].

Realizing the value and vast manuscripts preserves in India, Ministry of Tourism and Culture, Govt of India in February 2003 under the national mission for Manuscripts has already started countrywide digitization programme of manuscripts. It is believed that India possesses nearly five million manuscripts, probably the largest in world [17]. The National Mission for Manuscripts aims to locate, document, preserve and digitize to make them accessible. National mission for Manuscripts (NMM) is another initiative in the direction of preservation of manuscripts. The mission has already

identified and started digitization of manuscripts through manuscript resources and conservation centers [18].

5. ROLE OF LIBRARY PROFESSIONALS: - Normally it has been observed that, technical reports are always found in good number in almost every type of library. The libraries concerned with engineering, R & D, Agriculture, Medicine etc. and various other specialized libraries possess this type literature in abundance, but to our sorry state, this literature remains mostly wanting for the lack of attention. Gary literature rarely come under bibliographical control, mostly due publication of limited number of copies and the Classifying, Cataloguing, Shelf arrangement of the same is not mostly taken seriously, which otherwise should have been, in view of its importance. Status of the libraries in Indian subcontinent is a bit more worrisome, as these supplements mostly remain unrecorded and unattended and later get destroyed as trash.

To overcome this problem, library professionals need to put up an effort towards organizing these conventional sources of information. All this will help a great deal in bringing awareness about the use and importance of Gray Literature as that of other primary sources of information.

6. INDIAN SCENARIO: - In India like rest of the countries, Gray Literature is produced in abundance but remains untapped equally that of the developed world, mostly for similar reasons. Awareness among the masses about the Gray Literature in India is very poor and needs a facelift, which is possible by synergizing the institutions and organization which produce Gray Literature and which organize this in information and knowledge management institutions. Gray Literature is the outcome of various initiatives taken up by learned societies, R & D institutions, universities etc. but to our sorry state even the people working at higher level do not realize the importance of Gray Literature. The role of librarians here is to acquaint the Information Society about the importance of Gray Literature but that is possible only when this potential information source shall be readily available for use.

7. COURSE OF GRAY TO WHITE: -White literature is that literature, which is widely accepted world over for its being genuine, authentic and authoritative of production and distribution. Every white literature can be termed as one time gray literature as it is only after the sustenance of GL and its acceptance for long in society is what makes it white. Distinction of any idea or concept can definitely make it acceptable among the giants of that particular science provided this distinction should justify its place in that particular subject. Most of the time people fail to recognize the worth of a particular piece of information and with the passage of time it becomes white.

Knowledge remains grey when it produced and consumed by that very particular institution, it may remain confined to parent organization only to the level of discussions only or even to addressing the problem over which it has originated. The same knowledge becomes white from gray when it gets published like any conventional document, when it receives attention of people and gets constantly reviewed and evaluated for furtherance of concept. And the same gray knowledge may become a product or service when the concept gets applied, thereby helping in

wealth creation and improving the standards and quality of life by the transfer of same gray literature which when passes through different phases shows its real face with utmost value.

But this is possible only when we will help out in maintaining

7.1 Excellent metadata of grey literature (to improve discovery and control usage),
7.2 An institutional document repository of grey literature,
7.3 An institutional CRIS (Current Research Information Systems) for the contextual research information,
7.4 Mandatory Institutional policy to submit material with requisite metadata.

8. SOME SUGGESTIONS:-

8.1 Firstly tapping of gray literature is not only the problem of developing world, but also of developed countries. The attention, which this vital and huge information pile deserves, is not given to it. Awareness with the help of various publications of library & information science can do a commendable job in making people realize its importance and it organization and exploitation thereof.
8.2 All regional and national research and development institutions serving similar interests of society in general and specific areas in particular, should chalk out a strategy to create a common database of their institutional gray literature repositories of different fields. One of the institutions can serve the purpose by providing various bibliographical services to information seekers.
8.3 UGC can help a way in compiling a database of gray literature available in all recognized universities and colleges of the country and the service of their availability can be provided by creating a database on the pattern of UGC-Infonet or the recently launched shodhganga and shodhgahotri databases.
8.4 IITs, IIMs, IISc and various other prime institutions can pool their gray literature sources for sharing and usage in different field.
8.5 Other national information agencies and centers like, NASSDOC, NISCAIR, DESIDOC, NISSAT, can help in seeking ways and means to compile a national level bibliographic database of all such sources, which fall under the purview of being considered as gray literature [19].
8.6 Various library networks like, DELNET, CALIBNET, ADHINET can prove equally good in offering grey literature services
8.7 Library associations of India like, ILA, IATLIS, and IASLIC can play a pivotal role in tapping this huge ore of information by creating awareness firstly among working librarian, secondly by organizing various seminars, symposia, conferences, workshops on this theme. Associations like, LA, IFLA, FID, INIS, AGRIS, and FAO etc can play similar role at international level.
8.8 Governments can be pressed for providing some support to channalise this huge information in national and state development.

CONCLUSION: -

Grey literature, indeed is a valuable untapped and important stockpile of information which most of the time for the want of attention remains untapped. People are more conscious of the literature available with commercial publishers but the need is to help them grow more conscious of this important stockpile of information as well.

Libraries and other similar agencies working in the field of information sciences have to work on seeking out new and better ways and means of tapping this huge chunk of information. Need is to channelize this information by more acceptable means. Information scientists are required to engage themselves in converting this grey literature in white literature by copy-left means.

Almost every institution or organization globally at individual level is producing huge amount of grey literature and people most of the time despite realizing its use value are not able to reap benefits from it. If the same piece of information is made available through commercial publishers, the process with which people are more familiar and conscious of making use of. The same information will produce exceptional results in their relevant fields. There is also need to bring awareness among general masses about the importance of grey literature. Libraries especially those associated with academic and research organizations are playing a vital role in preserving and exploitation of grey literature. Production of scientific results in the form of grey literature is always in abundance but the fact is, same remains confined only up to the scientific community and need is to help it get used where ever needed.

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Online survey of Information Literacy in management institutional Library Professionals.

Dr. K. Kumar *

Abstract

The Information and Communication Technology has changed the way Library professionals to interact, communicate, share and acquire knowledge. However, when the computer was created it did not have features and facilities for users to interact. With the evaluation of Internet and Communication Technology, manual library has evolved into a dynamic, interactive and collaborative platform that facilitates exchange of knowledge and information amongst its users. A survey was taken among management college librarians to access their awareness towards rapidly developing ICT field.

Introduction

The growth and development of information and communication technology is playing a vital and viable role in the process of advancement of society in general and particularly in library and information science. ICT's not only save the time of librarians and users but also process the data accurately at a faster rate[1]. According to Eugine Garfield, the role of librarians will in no way be diminished by these new electronic system and services they offer. Information manager[2] will gather, collate, arrange and make information available. Thus adoption of ICT's should not be considered as a library, but as an added tool to provide the information[3] services.

Some of the salient traits of ICT's in Academic Libraries are as follows:

- Increased computer power leading to speeder and cheaper computer processing.
- Cheaper data storage Eg: Optical storage media.
- Digitization of information – text, graphics, photographs, speech, sound, video etc.
- Better data transfer between different systems and media. Improved telecommunication such as ISDN.
- Decreased size of equipment.
- Increased reliability of hardware and software to perform repetitive and routine jobs.

Improvement in Information and Communication Technology lead to development of digital libraries, therefore awareness on ICT's is very important for library professionals to cope up with multifaceted and multidimensional collection management and provide accountability to institutions and patrons. Therefore a survey was taken among management college librarians to evaluate the ICT Skills among them. Information has been obtained from librarians / Head of library department of 36 management colleges in Andhra Pradesh through a online survey method. Details are carefully analyzed and presented as tables, graphs, pie charts and Venn diagram for easier comparison between various ICT aspects.

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Objectives:

The present study has been carried out with following objectives

- To make a survey in order to assess awareness of information and technology skills among the management college librarians of Andhra Pradesh.
- To find out different types of ICT's commonly used by librarians.
- To find out the preference of respondents in using various categories of operating systems in management institutional libraries.

Limitations of the Study

- The study covers only Top 36 Management institutional library professionals, even though there are 210 institutions in Andhra Pradesh.
- Although 50 questionnaires were distributed only 36 responded. So the survey is limited to 36 responses.
- The study covers only Librarians/Head of the Department of management libraries, and not other library staff members viz Asst.Librarian, Library Asst etc.

Methodology

There are total **210** management institutions[3] in Andhra Pradesh, of which top 50 institutions were taken under survey. The present study was carried out to evaluate the responsiveness of Information and Communication Technology Skills among management institutional Librarians in Andhra Pradesh. Research method followed was an online survey method; structured questionnaire tool was used to collect the data. The online questionnaire was e-mailed to **50** librarians and only **36 (72%)** filled in questionnaires were received (Table 1). Figure 1 represents response rate of respondents.

Table 1: Sample Size

S.No	Gender	Questionnaire Distributed	%	Questionnaire Received	%
1	Male	35	70.00	29	80.55
2	Female	15	30.00	7	19.45
Total		**50**	**100**	**36**	**100**

Response Rate: 72%

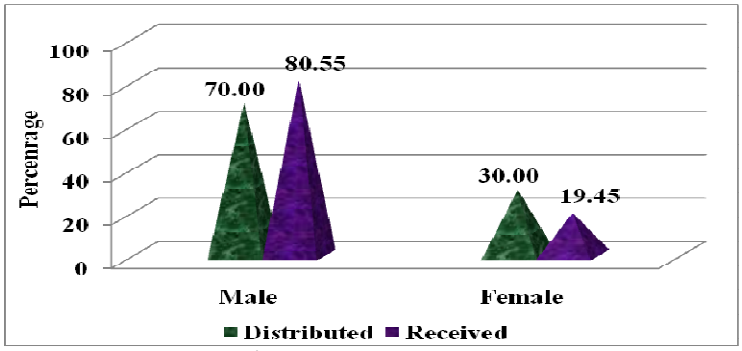


Figure 1: Response Rate

Analysis of Data

The received questionnaires were carefully edited tabulated and analyzed. To make the data analysis statistically (SPSS) sound, necessary statistical techniques (diagrams) are used.

Mode of Acquiring ICT Skills

Questions were asked in the context of resources of acquiring Information and Communication Technology Skills among Librarians. The analysis of responses are tabulated in Table 2, it is observed that 27.77% librarians gained ICT Skills through academic education, 5.55% were trained by suppliers of computers and software packages, where as 36.14% acquired ICT skills through private training programmes and 8.33% by attending workshops and seminars, 13.88% through self study and 8.33% librarians by online LIS Groups and Forums.

Table 2 Mode of Acquiring ICT Skills

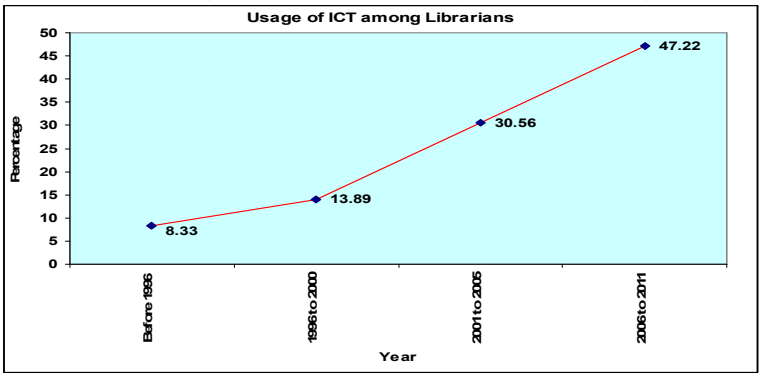
S.No	Mode of Acquiring ICT Skills	No of Librarians	%
1.	Though Academic Education	10	27.77
2.	Training by Suppliers of Computers and Software Packages	2	5.55
3.	Private Training Programmes	13	36.14
4.	Attending Workshops & Seminars	3	8.33
5.	Self Study	5	13.88
6.	Online LIS Group / LIS Forums	3	8.33

N=36

Chronological Growth on Usage of ICT among Librarians

Information related to chorological growth on usage of ICT among librarians is obtained and presented in Figure 2. It should be note that only 8.33% used ICT's before 1996, whereas growth rate increased in following years and at present state 47.22% librarians use ICT for academic purpose.

Figure 2: Chronological Growth on Usage of ICT among Librarians

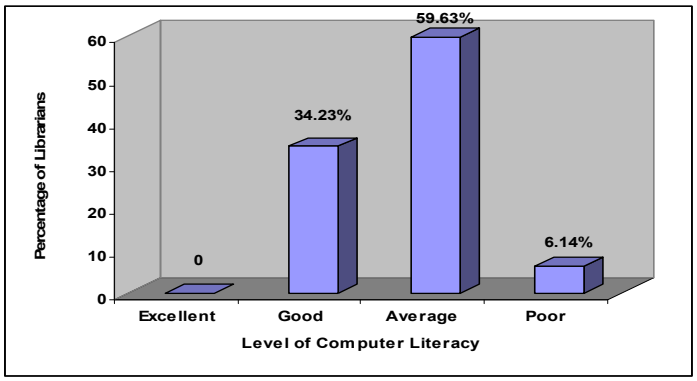


Level of Computer Literacy

Realizing the importance of computer knowledge to access ICT's, data were collected in the present study which reveals that most of the respondents are computer literate and possess basic knowledge on computers and other Information

Technology tools. Further, attempts were made to know about the degree of knowledge of respondents which have been presented as a bar diagram.

Figure 3: Degree of Knowledge on Computer and Information Technology Tools



It is depicted from Figure 3 that, according to their own assessment, maximum respondents (59.63%) have average knowledge on computer and Information Technology tools. It is followed by good knowledge (34.23%), poor knowledge (6.14%) and it should be noted that none of them have responded of having excellent access over computer and IT tools.

Usage of different Data Storage Devices

Various data storage devices such as CD/DVD, Pendrives, and Floppy disk can be used for preserving and transferring data. The study attempts to know frequency on usage of data storage devices by librarians and the result is summarized in Table 3.

Table 3: Usage of Various Data Storage Devices

S.No	Data Storage Devices	No of Librarians	%	Rating
1.	CD-ROM / DVD	35	97.23	1
2.	Hard / Portable Hard Disk	19	52.76	3
3.	SD / Mini SD Cards	7	19.43	4
4.	Pendrive	22	61.21	2
5.	Audio / Video Cassettes	1	2.78	6
6.	Floppy Disk	2	5.54	5

N=36

The analysis of data in table 3 reveals that most commonly CD/DVD (97.23%) is used by librarians, followed by 61.21% uses Pendrive, 52.76% uses Hard/Portable Hard disk, 19.43% use SD /Mini SD Card, 5.54% uses Floppy disk and only 2.78% respondents opined for usage of Audio/Video Cassettes. Ratings were given by respondents for each data storage devices, where CD/DVD ranked first and Cassettes ranked last which indicates Cassettes are lastly preferred by librarians.

Awareness on handling Operating System

As mentioned in Table 4 most of the librarians covered in the present study have reported positively for awareness on handling windows operating system (88.89%). Very few librarians have mentioned positive response towards handling UNIX

(2.78%) and Linux (8.33%) system respectively, and none of them reported for handling Mac Operating System and Sun Solaris.

Table 4: Awareness on handling of Operating System

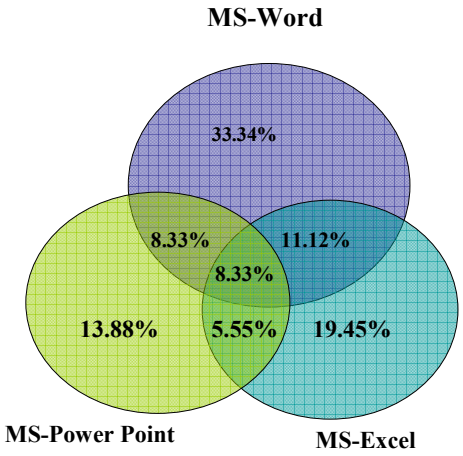
S.No	Operating System	No of Librarians	%
1.	Windows	32	88.89
2.	Unix	1	2.78
3.	Linux	3	8.33
4.	Mac OS	0	0
5.	Sun Solaris	0	0

N=36

Skills on usage of ICT packages

The Librarians were asked question about skills on usage of ICT Packages. It is observed that most of the librarians were aware on usage of MS-Word (33.34%), MS-Excel (19.45%) and MS-Power Point (13.88%) respectively. 8.33% of library personals are aware of all the ICT packages. The details are depicted in Figure 4.

Figure 4: Skills on usage of ICT packages



Usages of Search Engine

Study was carried out to know the knowledge regarding usage of search engines like Google, Yahoo, AltaVista, Dogpile, and Infoseek etc. The analysis is presented in Table 5.

Table 5: Usages of Search Engine

S.No	Search Engine	No of Librarians	%
1.	Google	33	92.67
2.	Yahoo	14	38.89
3.	AltaVista	7	19.45
4.	Dogpile	4	11.10
5.	Infoseek	2	5.54
6.	Others	3	8.32

N=36

From Table 5, it is observed that 92.67% Librarians are aware of Google, while 38.89% are aware of yahoo and 19.45% has knowledge about AltaVista followed by 11.10% for Dogpile and 5.54% for Infoseek, finally 8.32% have reported of having knowledge about other search engines.

Knowledge about Library Automation Softwares

Regarding familiarity about various library automation software, a question was asked to the librarians. The responses are tabulated in Table 6.

Table 6: Knowledge about Library Automation Softwares

S.No	Name of Software	No of Librarians	%
1.	CDS/ISIS	0	0
2.	SOUL	8	22.21
3.	Newzenlib	5	13.87
4.	Libsoft	9	24.14
5.	Libsys	0	0
6.	Koha	0	0
7.	Others	14	39.78

N=36

It is observed that 24.14% are aware of Libsoft and 13.87% librarians are able to handle New ZenLib, 22.21% has knowledge about SOUL, and the report says 39.78% uses other softwares and none has got idea about CDS/ISIS, Libsys and Koha Software.

Knowledge of Other Online Services

A question was asked to librarians in order to trace the importance of online services. The responses are shown in Table 7.

Table 7: Knowledge of Online Services

S.No	Online Services	No of Librarians	%
1	Online LIS Group	15	41.67
2	Online LIS Networks	15	16.67
3	Online LIS Forums	11	30.55
4	Online LIS Blogs	6	16.67

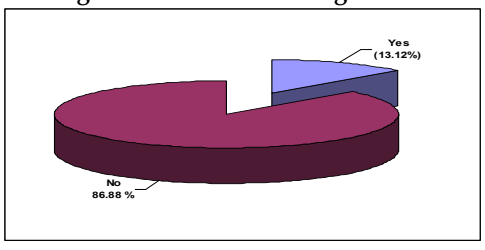
N=36

It is observed that 41.67% of librarians reported of having knowledge about online LIS Group and Network, while 30.55% opined of having knowledge about online LIS Forums and only 16.67 Librarians had knowledge about online LIS Blogs.

Acquaintance about You Tube

It is observed from Figure 5 that 86.88% Librarians from different engineering colleges do not watch video on You Tube and other video sharing, downloading and only 13.12% are aware of You Tube applications.

Figure 5: Usages of You Tube Sharing and Downloading



Findings of the Study

- Most of the librarians are computer literates and have average knowledge on computer and Information Technology related tools which is not a healthy sign towards the use of ICT's.
- A good number of the library professionals had acquired ICT skills by attending private training programmes rather than academic education.
- Huge number of librarians tends to use CD/DVD for preservation and Data transfer, and study reveals that Pendrive has also been used by them, but still this ratio could be improved in the near future.
- The Majority of respondents are versatile on handling Windows Operating System; the trend must be altered on usage of other Operating Systems such as Linux in terms of Security and Virus effect.
- Greater number of librarians feels comfortable for with various search engines especially Google.

Conclusion

- In most of libraries of Andhra Pradesh, library personnel's are working manually; even though the library is computerized, circulation of books/periodicals are done physically; so they are not aware about emerging technologies and latest advancement in the field of computer and information technology incorporate new and latest technologies in their routine works.
- Some of the upcoming libraries are not provided with computers, networking, internet and other basic requirements to moderalize a library, despite of librarians having knowledge on ICT's, they are unable to implement their skills on modern library.
- Training and orientation programme is the key to update with the latest and emerging technologies. But in Andhra Pradesh, these kinds of activities are not being organized in libraries in a routine manner; therefore library personnel are not being trained with new technologies.

It is concluded from the study that the management college librarians in Andhra Pradesh are aware with the modern concepts like information and communication technology. They use these concepts. But they hardly implement it as for as rendering of library services are concerned.

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Status and Impact of E-Learning on Users in Library

Verma, Jyoti* & Sonkar, S. K**

Abstract

Information technology and Internet has sifted the paradigm of the academic and research environment. All the fields of the Knowledge are affected by the information technology. E Leaning is playing vital role in the field of Library science and Science and Technology. E-learning is the recent media to educate the users, students and research scholars in the digital environment. The paper presents the basic concept of e-learning, tools of e-learning, modes of e-learning, type of academic users and its impact of the user.

Keywords: E-learning, Information Communication Technology (ICT)

1. Introduction

E-based learning systems generally include at- distance delivery means such as satellite broadcast, two way videoconferencing and videotape and CD-ROM DVD delivery systems. All such systems attempt to serve learners at some distance from their learning source. In other language we can also describe E-learning is also known as Distance learning, eLearning is a formalized teaching and learning system specifically designed to be carried out remotely by using electronic communication like Computer[1].

The Internet opened new possibilities and now any type of learning content, be it for school, graduate or masters level, employee training, research activity or any other type of academic offering is called e-Learning.[2] In general we can also define of e learning as "A new interactive method of learning through a computer network, and other Information and Communication Technology (ICT) means".

1.1. Catagories of E-learning: There are some different Catagory of eLearnig:

Online learning via mail, Internet etc.
Distance learning
Mobile learning
Computer-assisted learning
Multimedia learning
Blended learning (combination of online and face-to-face)

1.2. Modes of E-learning

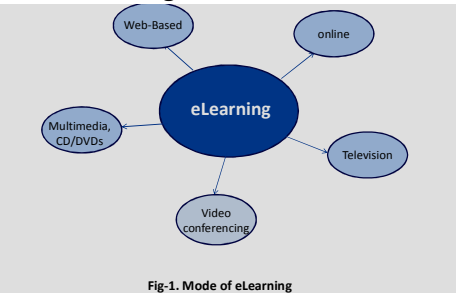

Fig-1. Mode of eLearning

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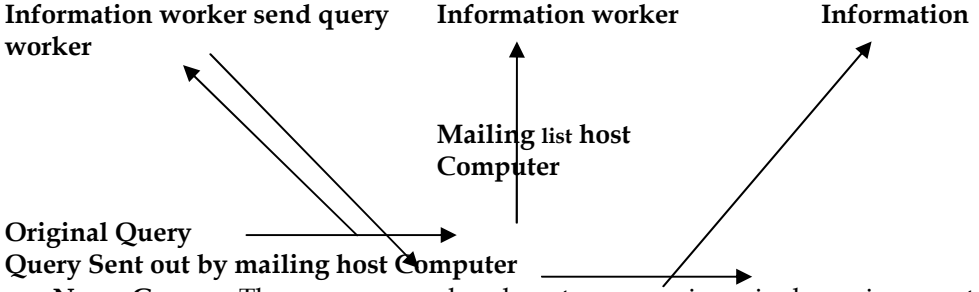
**Babasaheb Bhimrao Ambedkar University (A Central University), Lucknow

1.3. Tools of eLearning: The following tools are covered they are (Lobo Janet, 2006)-

E-mails: E-mail is used by information workers, librarians and others for formal and informal learning and teaching activities

Mailing Lists: It is possible to send e-mails to groups using mailing lists. The process is managed by a hosting service that maintains a list of all the different discussion lists and the people who subscribe to them. It is run by a mail server.

Fig .2 : Diagram shows operation of mailing list



News Groups: The user can read and post message in a single environment rather than a series of e-mails arriving at different times. Here an individual will send a message to a central source, which then copies it to individuals and other news groups.

Bulletin Boards: Bulletin boards provide a facility for present your views under various topic headings. Many library and information centers provide bulletin boards services within their web sites as a means of enabling their customers to discuss ideas and share information.

Web forms: Web forms are often used as a means for providing a reference service within a library or information unit. They are commonly based in –

Reference service

Administration of servicing such as mentoring programmes.

As a tool for obtaining information from participants on e-learnin programme.

Polling : Polling enables us to setup a survey/questionnaire and obtain feedback for a wide range of people.

Instant messaging: It enables us to send and display a message on someone's screen in a matter of seconds. It means the staff who is working on a busy reference or help point may message a colleague with a question and obtain response.

Chat or conferencing: This enables users to hold a live discussion by sending each other shortwritten messages.

Internet Telephony: In this tool a user can make calls by using the internet. An individual can make distance phone calls through the computer and the internet without paying long-distance phone charges.

Video conferencing: it is a system that allows to exchange the ideas or thoughts on spelised issues. It requires specialist staff and very expensive devices for videoconferencing.

Virtual worlds: Used for e-learning within Universities, it is possible to access through dimensional virtual worlds.[3]

1.4. Delivery Methods- e-Learning is done over the network environment, the e-learning material may be deliverd through internet or by CD-ROM. The following common delivery methods are being used in e-Learning:

Print	e-text textbooks
Video	streaming video video tape satellite transmission cable
Audio	streaming audio audio tape
Review and Exams	electronic interactive paper
Communication	Asynchronous email listservs threaded discussion, weblogs forums Synchronous chat videoconferencing teleconferencing

Fig.7: eLearning Process

Source: @School of Telemedicine Bio-medical Informatics (STBMI)

2. **Why E-learning?**

Provide flexibility of choice in terms of availability of resources.
Provides multiple styles of methods to learn like audio, video.
Real time learning avoiding geographical barriers.
Cost effective for physical deployment of library set up and reduces financial crunch for the users.
Develop Internet Technology (IT) and accessing skill.
Major university and institute have started e-learning courses to create faster and greater students and instruction interaction.
The greater attraction of users due to cost effective and enhance the systematic and easier scheduling.

Fig.2: eLearning in Digital Era

Source: http://www.turhanerbas.com/dunyadaki-cesitli-e-ogrenme-ornekleri/)

3. **Benefits of eLearning:** E-learning is less expensive to support, and is not constrained by geographic considerations, it offers opportunities in situations where traditional education has difficulty in operating. Anyone can benefit from eLearning anytime, anywhere. There's no limit to the kind of content that we can develop into an effective eLearning course. The most obvious benefits provided by eLearning are:

   E- Learning is playing vital role in providing helping hand to users who are engaged in distant education.
   Reducing the financial crunches which include purchasing cost, maintenance cost etc. in library.
   Learning with joy and enjoyment for the user through its innovative and interactive content and delivery.
   Minimum work space can serve the purpose of deploying e learning and reduce the work load to the librarian. This enhances the efficient flow of work.
   Greater opportunity to interact globally with renowned library institute to share the information and way of learning.

4. **Users of Libraries:** There are great variety of users, demanding different kinds of library services, a user of the library, is a person, who visits a Library for one or more of the following purposes.

   To browse current books and journals through a collection of the latest arrivals in the library.
   To get a particular document for consolation or study in the library.

To obtain factual information on a topic, event, activity etc from reference sources

In the person visit the library in groups for any of the above purpose are known as the community of users of the library. The user community may be of diverse groups, comprising different categories of users such as students, teachers, planners etc. The user community may also be of only one type of users such as scientists of an institute.

4.1. Types of users:

It is very difficult to identify different types of library users. In general, the library users may constitute of the students, teachers and researchers, scholars, authors and writers, planners and policy makers, business managers and executives, entrepreneurs and industrials and the general public. Here we present some characteristics of the main groups of the library users.

4.1.1 Academic Users: in academic libraries, students, teachers, and researchers, etc. are the frequent users of libraries, who make little use of library staff assistance. These libraries record the highest level of core demands of their users and there is high use of background materials in these libraries. In universities libraries the users are the students of different levels of study in different subjects, the teachers, who impart instructions at different levels in different subjects, the research students, who work for their research work such as M.Phil, Ph.D degrees and the members of the various academic and executive's bodies of the universities.

4.1.2 Industrial Users: In industries the frequent users of libraries are scientist or technologist, who is more concern with practical problems. These users are more dependent on libraries staff in using library services like reference, CAS, SDI, etc. and they always demand for specific information and documents as their need.

4.1.3 Government Officials: Government also are frequent users of libraries, who make more use of out side sources of information and their demands for information relatively low and for specific documents are quite high. They make little use of libraries staff assistant.

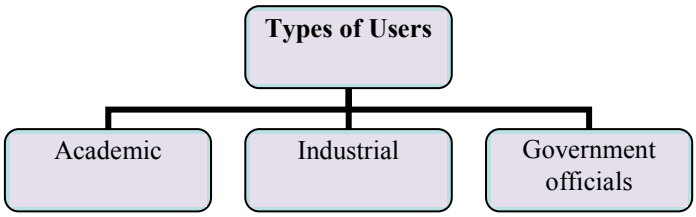


Fig-3: Types of users in Libraries

5. Impact of eLearning on Library

In the every walk of our day-to-day life we are finding the use of technologies and libraries are not exception for that. The single force that has brought revolutionary changes in functioning of libraries is IT. The introduction and application of these modern means have changed the value of library. E-learning has brought many changes in Library areas and services. Several publications, journals and eBook

are available on Internet so users don't need to come to the library frequently, due to facility available in Personal Computer , There are some broader areas of which E-learning has brought many changes;

Areas:

Text Book- The flexibility of e-Learning has reduced the purchasing cost of the book. It resists the portability of the book and has served the best source of providing information any time in the absence of text book. On other hand it is playing major role in reducing the publication.

Periodicals – The graph of Subscription of Periodicals heading towards negative due to easy access of desired journals, magazines and other reference materials.

Reading Section – The frequent visit to the physical library is reduced by the users due to availability of time saving source of information.

Services:

Reference Service- The way of using reference service has changed. E-Learning provides quick and pinpoint service through E-mail, Videoconferencing, and Telephone etc.

Resource Sharing – The scare resources don't serve the purpose of every user's desire. E-learning is the best option to extract information on unavailability of physical resources.

Circulation Service- Longer circulation period is the major problem in any of the library where few quantities of text books are available. This may lead to helpless when a user doesn't get at eleventh hour.

6. Impact of eLearning on Users

Library users are well educated and they are accessing information from the various ways. Libraries are having print resources as well as e-resources and developing various tools to assist the user to retrieve their desired information. In the digital environment, the librarian role has been changed as an educator to educate the library users for accessing of the latest information available/subscribe by the library. E-learning may be provided through online information resources/tutorials which help to user to get information at their working place/ home. It also helps to distance user to adopt online learning which reduces the boundaries of time and distance for the users. The library users are able to access all the desired information at fraction of time.

Fig.4: Users in Digital Library
Source: @Digital Library at STBMI

7. Current Status of eLearning in India

E-learning is not merely a new concept but also has grown as the World Wide Web has developed in each and every country and spreading its roots for Indian environment as well. In the era of Information Technology, users can stay at home and get educated through e-learning across the world via Internet (2006)[4]. India is not untouched by effect of E-learning. Due to vast population and diverse geographical region e-learning is serving suitable source of Information execration for any of the user. Due to increasing use of e library many small and large institute are starting e-learning courses. It has broadened the scope of library. "The traditional mindsets are beginning to change, with the corporate sector leading the way in embracing technology-based learning avenues. Many schools have started augmenting teacher-led programme with content rich e-learning module. Government initiative is not far behind either".[5] Many schools in India are offering basic primary education through E- learning with the motive of broadening the mindset of child.

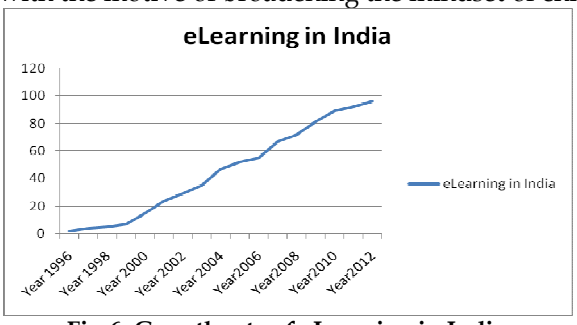


Fig-6: Growth rate of eLearning in India

The figure 6 shows that growth rate of e learning is increasing gradually. The data taken is general consideration from the source there is no evidence of start of e learning in India. The starting of e-learning appears with IT emergence.

8. Conclusion

Education and community are effectively being re-engineered. Though the information technology is dominated our all fields of life, but it can't surpass the traditional system of education and learning. It can be a part of the existing educational system, particularly in the country like India. As USESCO has described *E-learning is a cornerstone for building inclusive knowledge societies*[6] so some standards have to be developed in reading material, infrastructure facilities in Libraries, suitable for the Indian conditions so that the growth of e-learning can be made much faster with reducing the manual work. But on other hand the unavailability and lack of ICT resources may obstacle the e-learning in India.

9. Suggestions:

As the e learning is in transit stage there are certain basic blocks we need focus to speed up the development of e learning.

There should be short term training to library users.

Adding short module in library science curriculum will be fruitful to adjust in e-learning environment.

There should be awareness programme to library users about basic IT application.

Motivate every user to use e-learning application.

Some of the Institute which runs e-learning courses in India is as follows:

e-Learning's Institute	**Web Link**	**Remark**
Sakshat (the national mission on Education Through ICT	http://www.sakshat.ac.in/	It Support self learning through Virtual Classes and Testing Services.
Continuing Education	http://www.learnwell.org/	It provides continuing education (CE) courses for: Nurses and pharmacists Social Workers Dental Health Workers All interested in health or ethics
ICSI eLearning Portal	http://elearning.icsi.edu	It is joint initiative taken by Institute of Company Secretaries of India (ICSI) & GurukulOnline Learning Solutions (GOLS) to provide quality education through Internet.
National Programme on Technology Enhanced Learning (NPTel)	http://www.nptel.iitm.ac.in	NPTEL provides E-learning through online Web and Video courses in Engineering, Science and humanities streams.
Amrita Virtual interactive eLearning World	http://www.aview.in/aview-classroom.php	A-VIEW Classroom is a framework that provides a rich interactive social environment for E-Learning.
C DAC's eLearning Portal	http://elearn.cdac.in/eSikshak/index.html	C-DAC, Hyderabad is a Knowledge centre with the components of Knowledge Creation, Knowledge Dissemination, Knowledge Application to grow in the areas of Research & Development, Training and Business respectively.
IGNOU	www.ignou.ac.in	Virtual Classrooms Master of Library and Information Science PG Certificate in Cyber Law PG Diploma in Acupuncture.

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6. UNESCO e-learning Available on: http://www.unesco.org/new/en/unesco/themes/icts/e-learning/

Planning and applying Search Strategy for effective Information Retrieval

Sandhya Digambar Shinde*

ABSTRACT

The easiest way to find information is using a search engine, but one may obtain irrelevant result. Hence, it is very important to know more about how to search, how to plan a search strategy, what are the different search operators available? The author in the present paper discussed why search skills are important for librarians as well as for users. Further he emphasized on different steps for planning and formulating search strategies such as understand the query, spot the keywords, find out synonyms and related terms, construct the search statement using different search syntaxes (+, -, ~, and, or, not, etc.), taking references, etc. The author also discussed about the advanced search option available in search interface, because it is more suitable to use as one may not need to remember various search operators to formulate search strategy, instead they can use the readymade options available in advanced search.

KEYWORDS: search strategy, information retrieval, search, Boolean logic, wildcards, etc.

1. WHY SEARCH SKILLS ARE IMPORTANT FOR LIBRARIANS?

Google is currently the most used search engine. For more and more users, the way to find information is using Google, which they consider easiest way to find information. Users often feel that they do not need any training to search the information and just put some keywords into the Google search box or library OPAC. They initiate search for information without planning exactly how they are going to carry out the search, as they may not be aware of the different searching options provided by the Google or library OPAC or databases. Consequently user

may miss other useful references, and

may also find a lot of irrelevant material

While searching, a lack of knowledge about which searching options are available can waste time of both librarian and user and may show irrelevant results. Here, the job of librarian has immense significance, as his job is to provide "Right information to the right user at the right time in the right form". When user approaches to a library, the librarian has to help him find the right information as quickly as possible. Alternatively, he should discuss with the user the way of finding information. In fact, a little time spent in formulating a search strategy will both save time and provide greatly improved results. Now reference staff and patrons believe that an answer to almost every question can be found if the right combination of resources and search strategies is chosen from the multitude of web resources and online services accessible. Therefore, both librarians as well as users should learn how to search efficiently using different search strategies.

2. PLANNING A SEARCH STRATEGY

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Search strategy is your plan of action or it is planning how to look for information. If searching is to be efficient, the librarian and user as information seeker needs to take a systematic approach. There are some steps for planning a search strategy as follows:

Search Strategy is a systematic plan for conducting a

UNDERSTAND THE QUERY IN HAND

First, the librarian or the user must concentrate on the question or topic and he should make sure that he understood the question before finding any information for it. Check whether any unknown terms are there. If yes, then look up for the meaning of any word. For that, the library has a wide range of subject dictionaries, glossaries, encyclopaedias, or internet facility for use. Alternatively, the librarian can simply discuss the topic with the user.

2.1. HIGHLIGHT THE KEYWORDS AND KEYPHRASES

In this step, all the important words or phrases known as keywords or key phrases should be spotted. Using those keywords one can start searching. It is important to spot them all if not

using the wrong keywords may obtain the irrelevant result
not using all the keywords may miss some important information

In below example, the keywords are highlighted.

Topic: What effect does **health** have on **learners' success**?

Keyword 1 : Health - **Keyword 2** : Learner success

2.2. FIND OUT SYNONYMS AND RELATED TERMS (ALTERNATE KEYWORDS)

Identifying the keywords is an important step along with synonyms, because to find all the information about the topic, it is necessary to identify many different words and phrases that can be used to describe it. For finding synonyms or related terms, using the Thesaurus, Controlled Vocabulary, Keywords within articles, etc. is most useful. For each term, the thesaurus contains the narrower, broader, related terms, as well as a scope note.

Use **broader terms** which help to find more general information on the topic
Use **narrower terms** which help to find more specific information on the topic
Use **synonyms** or **related terms,** which help not to miss any information

2.2.1. BROAD AND NARROW TERMS

If the keyword is **broader or general**, the result may provide **too much information** that would take more time to read through and may be irrelevant. In order to get fewer, more relevant results, try to use narrower terms. If the keyword is **too specific and getting fewer results,** use **broader** terms. For identifying broader terms, one may think of under what broad topics the term would come.

For example: Phytochemistry

UF Plant biochemistry, Plant chemistry
BT Biochemistry
NT Photosynthesis
RT Phytochemicals

Note: UF – Used For, BT – Broader Term, NT – Narrow Term, RT – Related Term in Thesaurus

The synonyms and related terms for example mentioned in step 2 are as follows (fig. 1):

Keyword 1 (Health)	**Keyword 2** (Learner success)
Wellbeing	Learning outcome
Disease	Learner progress
Sickness	Learner assessment
Medical condition	Goal achievement
Illness	

Figure 1: synonyms and related terms

2.3. CONSTRUCT THE SEARCH STATEMENT

After finding keywords, synonyms, related terms, etc., the next important step is to create the search statement, which includes use of different search strategies. The site (http://www.googleguide.com) includes different search operators. Some of them are mentioned along with their appropriate operator as follows: **For example:**

- Boolean logic (AND, OR, NOT)
- "must include" ("+") and "must exclude" (" - ") search terms
- Wildcards (*)
- Phrase search (" ")
- Fuzzy Search (Tilde ~)

By applying required operators, we can formulate a search strategy as follows:

careers +in "Library science" site:edu filetype:pdf

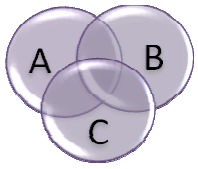
role +of women "ancient rome" site:edu filetype:ppt

2.3.1. BOOLEAN LOGIC

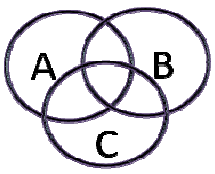
Search terms may be combined using Boolean logic, so that the most relevant results are returned. Three Boolean operators are **AND, OR, NOT** (See fig. 2).

AND	OR	NOT
used to **narrow** search results	Used in the search statement to **expand** retrieval by including synonyms and closely related terms.	used to **exclude** unwanted words
Returns results that contain **all the words** you enter	Returns results that contain **either of the words** you enter.	Returns results that do **not contain unwanted** words

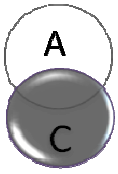
Figure 2: use of Boolean operators



A or B or C



A and B and C



A not C

2.3.2. WILDCARDS

Use wildcards in the search statement for searching multiple forms or different spellings of the same word. Wildcards let you substitute symbols for one or more letters. They are useful when you are unsure of spelling, when there are alternate spellings, or when you only know part of a term.

Example:

If you include * within a query, it tells Google to try to treat the star as a placeholder for any unknown term(s) and then find the best matches. For example, the search [Google *] will give you results about many of Google's products. The query [Obama voted * on the * bill] will give you stories about different votes on different bills. Note that the Wildcard (*) operator works only on whole words, not parts of words.

Some resources will truncate terms automatically (e.g. in Google 'auto-stemming') which means that a search for 'socially responsible investing' shows social, socially, investing, investments, investors, responsible, responsibility in result pages. You can turn it off by enclosing the whole phrase in quotation marks -- "socially responsible investing" but not for individual words.

2.3.3. PHRASE SEARCHING

Exact phrase can be searched by selecting the "**exact phrase**" option, or by using quotation marks.

For example:

"Library Budget" – returns records that contain both library and budget immediately adjacent to each other.

3. CREATE THE SEARCH STATEMENT

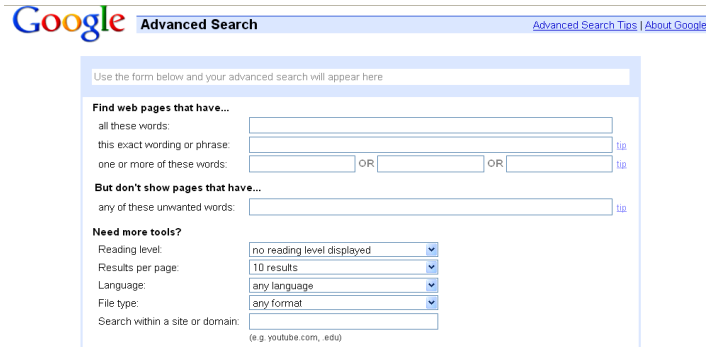
After deciding which syntaxes/operators to be used, type search statement in search box or use the fields (e.g. file type, language, date, region, etc.) available in the search interface to formulate quite complicated searches.

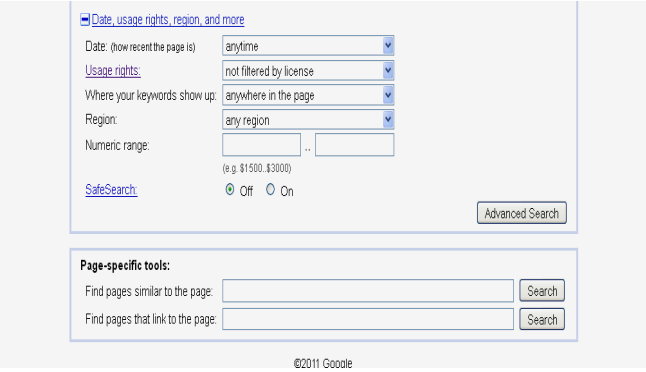
For example, the following search statement locates information on purchasing a used car:

(car or automobile or vehicle) and (buy or purchase) and used

4. START SEARCHING

There are various ways of searching for information on a topic. Once the search statement/s ready, use various search engines like Google, AltaVista, and meta-search engine like Dogpile, Clusty, or the library OPAC for searching the information. There may be two options available as simple search and advanced search. It is more suitable to use advanced search option (See fig. 3), because one may not need to remember various search operators to formulate search strategy, instead they can use the readymade options available in advanced search.





CHECK SEARCH RESULTS

If the result shows less number of hits, the search statements can be modified to increase retrieval by including broader terms and related terms or if it shows large number of hits then reduce retrieval by the substitution of narrower terms. This improves the search again.

5. TAKING REFERENCES

It is very important to note all references in full (journal title, issue number, volume number, etc.), in case if you wish to cite it. It can be very difficult to check back later. Many citation styles vary from one field of study to another like APA style, MLA style, Chicago style, Harvard style, etc.

In addition, some databases offer a 'download citation' or 'export citation' facility, which allows you to export selected references to various reference management software (e.g. EndNote, ProCite, Reference Manager, Biblioscape, Zotero, etc.).

http://www.endnote.com/
http://www.procite.com/
http://www.refman.com/
www.biblioscape.com/
http://www.zotero.org/

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12. Retrieved online on 19 December 2011 at http://www.googleguide.com/advanced_operators.html
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14. Retrieved online on 19 December 2011 at http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/SearchEngines.html
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Multimedia Technology Application in Libraries and Information Centers

Dr. Ashish Kumar Sharma*

ABSTRACT

Multimedia is any combination of texts, graphics, animation, audio and video, which is the result of computer-based technology or other electronic media. Multimedia prepared in hypertext environment is called hypermedia. In this paper, an attempt has been made to cover the various aspects of multimedia. Very briefly, the definition, features, types of multimedia, hardware software requirements and usage of multimedia technology in library and information centers have been covered.

Keywords: Library Technology, Hypertext, Navigation, Hyperlink, Effective medium, MM Library.

1. Introduction

In the information industry, parlance "multimedia" has become one of the frequently used words today. It is conjectured that in near future multimedia might become a standard term applicable to all sectors of our personal, professional and business life. It is, therefore, imperative that every one of us is aware of multimedia and its applications. The term "multimedia" ordinarily means a combination of more than one media. Media is an abbreviation for "Magnavox electronic data image apparatus" meaning, a unit system of information retrieval, printed and audiovisual forms of communication and any necessary equipment required to render them usable. So, multimedia conveys the meaning of number of forms of information communication. The journey of idea/expression, which has been recorded from clay tablet, stone, parchment, bhojpatra, fabric, paper has now entered into multimedia domain like microform, electronic and optimal media. Multimedia technology is thus designed to integrate and manipulate data from diverse sources such as video graphics, animation, audio and text on a single hardware platform. It also epitomizes technology integration using multimedia tools. The mode of storing all type of data on a single disk is done through digesting all forms of information. Multimedia now has become a powerful tool for instruction, which has influenced significantly in the present process of teaching and learning.

2. Definition of multimedia

According to **Ching-Chiu Chen**, "multimedia extends the hypertext concepts of nonlinear and non-sequential links of textual material that may be digitally encoded for storage and retrieval through computer based systems, including image, sound, graphics and animation."[1]

Multimedia is media and content that uses a combination of different content forms. This contrasts with media that uses only rudimentary computer displays such as text-only or traditional forms of printed or hand-produced material. Multimedia includes a combination of text, audio, still images, animation, video, or interactivity content forms.[2]

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Multimedia means the integration of various individual media such as texts, graphics, animation, video clips and sound files into a digital environment. It has the ability to represent the data in an interactive and attractive environment through user-friendly interfaces and hypertext links.[3]

Another simple definition is given by C.K. Ramaiah who states that "multimedia is a combination of text, graphics, animation, audio and video, converted from different formats into a uniform digital media and is delivered by computer."[4]

3. Features of multimedia

Multimedia has following features:

(1) Interactivity: When the end-user is able to control the elements of media that are required information in a non-linear way.

(2) Navigation: Enables the user to explore and navigate from one web page to another.

(3) Hyperlink: Non-linear navigation of "jumping" for required information.

(4) User-friendly: Easy to use, easy to understand.

4. Types of multimedia

Following are the types of multimedia[5]**:**

(1) Text: It is the basic element for all multimedia application. Text directly informs the user about the information that it wishes to convey.

(2) Graphics: Pictures as visual in digital form used in multimedia presentations. There are two types of graphics ---

(a) Bitmap Graphics (image raster): This sort of graphic is formed by pixels arranged in specific way in a matrix form.

(b) Vector Graphics: It is formed by lines that follow mathematical equations and thereby called vector.

(3) Animation: Process of adding movements to static image through various methods.

(4) Audio: Sound in digital form used in multimedia Presentations.

(5) Video: Video in digital form in multimedia Presentations.

5. Hardware and Software requirement of multimedia

Following are the minimum hardware and software requirement of multimedia[6]:

1. PC-386 processor. At least 4 MB RAM (8 MB is preferable)
2. Digital Audio System. Audio Amplifier/Speaker/Headphone
3. CD/DVD drive
4. VAG graphics. VHS-VCR controller card 16 bits preferable
5. Hard disk with at least 120 MB.
6. Means of user interactive devices (remote control device, mouse joystick, keyboard, monitors etc.
7. Software (windows, Link way, Author ware, Professional micro mini - card etc.

One may also upgrade their old PC's by adding multimedia software. In addition to this, multimedia upgrade kit can save money by binding everything according to the need of the organization. Upgrade kits include at least a sound

card and CD ROM/DVD ROM drive, for more applications microphone, headphone, speakers, MIDI Software, video support, CD ROM titles, CD ROM interface card and software applications.

6. Multimedia Application in Libraries Information Centers

In this age of electronic era, libraries come forward to integrate multimedia services into regular service of the library. Libraries in the advance countries even do not have separate department for this purpose. There seems to be marked improvement in the use of multimedia services in libraries for the last few years, particularly, in metropolitan libraries, necessitating huge budget provision. Multimedia resources are available for reference service, instructional and entertainment purpose or mostly available at national level institutions and organizations. Due to availability of internet service in office, library and house multimedia has become more popular and attracted the attention of the decision makers, financial authorities and educational administrators.

The multimedia technology can be useful to libraries in various ways. Some of the important ones are mentioned below**:**

1. It allows creating, editing, retrieving and storing the information.
2. It permits non-linear and non-sequential access to the stored information.
3. It helps the users in providing all the information from different media (print, microform, audio & video) in one platform.
4. It saves space, storage and maintenance cost of different types of information media.
5. It can be adaptable to remote access through information networks
6. It is a very effective medium of obtaining information then the individual media like print, no-print etc. taken separately.
7. It can be used as an instructional medium in the libraries.
8. It aids in video-conferencing.
9. Large number of reference sources is now available on multimedia CD-ROM's/DVD ROM's for use in the libraries. It makes new and innovative library services possible.
10. Multimedia form of information is more durable in comparison to other forms of information.
11. Multimedia packages covering a wide range of subjects and programs can be used as reference sources in libraries.
12. Use of the technology enhances the image of the libraries and information centers considerably.
13. It makes new and innovative library services possible.

7. Limitation of Multimedia Technology

Following are the limitations of multimedia[7]

1. Technological limitations: These are related to the company products, its compatibility, control, strategy, standardization, copyright etc.
2. Skill: Before using this user is to undergo training on multimedia and its use.

3. Concentration: These databases are generally very large and the new user finds it difficult to keep control over them. Therefore, the user requires an additional efforts and concentration.
4. Physical strain: It causes a lot of physical strain on the readers' eyes and brain.

Conclusion

The growth of multimedia technology has given a new dimension to human life. In libraries, it is succeeding to change the approach of the professionals as well as of users in their information gathering, repackaging and dissemination activities. Therefore, it can be foresaid that multimedia will occupy a prominent place in the areas of information control and management in the days to come.

Science is theorizing the things and technology is the application of it. All applications have their positive as well as negative sides. Multimedia itself is not an independent technology. It has number of bearings as well as limitations. However, in the rapid growth of pedagogical give and take process, multimedia, provided it is used by enrooted traditional value system, can function in colossal way to serve humanity.

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Reference and Referral Information Services in Academic Libraries

Dr. Deepak Kapade* & Dr. Gopal W. Pendam**

Abstracts

The paper reveals about the Reference and referral services in the academic libraries. It RTM, Nagpur provide some general guidelines for service point of views, types for providing information services and environment in the reference section as well as the users in academic libraries are describes in this paper.

Introduction

Academic Libraries' reference and referral information services support the teaching and research programs of the University and college by providing and facilitating access to information, regardless of format or physical location of the resources.

Reference service

According to Dr. Rranganathan "a reference service means establishing the contact between the right reader and the right book at the right time on personal way"[1]. Now the user wants the readymade information through reference and referral sources. Referral services are the next stapes of reference service. Users refer to standard directories, Union catalogue, referral databases and other sources as their requirements. Referrals refer to other libraries, agencies or academic institutions are made wherever appropriate

Referral service

According to Finer, Ruth, "Referral service connect a searcher for specialized information with an appropriate personal or organizational source"[2]

Referral service is process of linking the user with source where information is available.[3] After overall study of these services, with the experience of teaching and administration and after discussed with the professional staff, it is found that there should be some specific guidelines for providing reference and referral services.

Aims

These guidelines describe forms of reference and referral services, which are offered by the Academic Libraries and intended to insure uniformity in standard of the highest quality in all academic libraries, despite the diverse size, resources, staff, and clientele of the various units. They are also a source of information concerning library policy and procedures. They are to be used in conjunction with the Reference Collection Policy and other related policies and publications of the University and College Libraries. These guidelines are use for the staff members of the Academic Libraries who providing reference and information services. Public service units covered by these guidelines including the college libraries,(Arts, Commerce Science) Agriculture and non agriculture university libraries.

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The Guidelines for Reference and Referral Services are reviewed periodically to incorporate the latest library policies and to reflect current practices and procedures of the units providing reference and referral information services.

Ethics

The needs of library users should be taken seriously and treated with respect. Under the present situations if there any discussion regarding outside the professional context about an individual, a group of users or about any transaction between users and staff members could not be discussed.

Library Users

Students, faculty, and staff of academic libraries are primary clientele. However, the University and college Libraries also provide reference services to outsiders, when giving routine reference and information services.

Environment

The environment is arranged to help users to feel easy in requesting assistance and while using library resources. Reference and information service points should be easy to locate. Clearly worded signs, conspicuously posted, should indicate where users are to go for assistance.

* The reference desk should be located away from heavy traffic areas and sources of extraneous noise, e.g., photocopiers.
* Whenever possible the reference area is arranged so that conversation between library users and staff members can be private.
* Seating arrangement of users or carrels should be provided near the reference collections.

Services

* Reference and Referral services in the public service units of the Academic Libraries serve the present information needs of the academic community at the University and colleges and anticipate future needs.
* Reference and information services are available to individuals who come to the library and to those who made request for the assistance over the telephone, through written correspondence, the library catalogue comments screen and well developed libraries through **Ask a Librarian**, the library's electronic mail reference service; or through electronic mail. [7]
* Reference and Referral services are publicized utilizing all appropriate forms of communication media.
* Reference and Referral services are evaluated periodically.

Basic Services

The provision of basic services is common to all units, but extended searching is dependent upon the public service staff and resources of a unit. Staff members consult other library staff, when necessary, for assistance in answering any question.

* Most questions are answered while the requester waits. Extended reference, telephone, electronic, Digital and written correspondence questions are answered as time allows.
* Informal instruction is provided as needed in the organization and use of both print and electronic resources, including the Libraries web site, the library catalog,

electronic databases, and other reference materials, regardless of format. More extensive individual instruction in library methodology and bibliographic research, e.g., explaining the organization of literature in a field, is given at the desk as time permits or by appointment.

* Bibliographic verification of materials is providing.
* For those items not available on campus, assistance is given in obtaining them through Inter-Library loan Service, or through referral to off-campus collections or agencies.[8]

Conclusion

There is no doubt that the digital reference is a new powerful method of delivering a reference service. Libraries that have been providing traditional as well as digital reference services for few years should more on form experimenting to defining new services. The effort of all the librarians, technical, clerical, administrative and professional staff are needed to support and promote the service more users oriented. Therefore, the staff member of the library should have act as personal assistant cum information provider of the researcher/users. The reference department serves as a meeting point between the library and its external environment. It is one of the major areas of the library where contact is made with the public; the reference librarian therefore serves as the contact channel. The effectiveness and efficiency of this contact is premised on the ability of the reference librarian to communicate effectively with the users which in turn promotes the public image of the library and improves library patronage.

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E- Resources and Academic libraries

Ms. Yasmeen Zia* and Ms. Seema Tehseen**

ABSTRACT

Today's world is the world of electronic resources. This thing implies in the present libraries also, so the development of different e-resources in academic libraries is the need of answer the following questions. This paper discusses the various forms of e – resources in academic libraries.

Key words– Electronic resources, academic library, E-book, E-Journal, Internet.

1. Introduction

The library and information science profession along with its innumerable services are going through an important period of transition.

The field of library and inf. science, especially the practical side of the library and its application, has been revolutionized during the last three decades. The advancements in computer science and its applications in every activity of the library and inf. centers have made the librarians and information scientists more creative, more intelligent, and more and more responsible. Use of E-resources in libraries is a part of such advancement.

2. Various definitions of E-resources -

(a) "An E-resource is an electronic information resource that you can access on the web on or off campus"

(b) "E-resources can also be defined as those electronic information resources and services that user's access electronically via a computing network from inside the library or remote to the library."

(c) "Use of E-resources is defined as searching, browsing, examining and visiting an E-resources and or service by a user".

3. Types of E-resources -

Libraries of all sizes and types are embracing digital collections, although most libraries will continue to offer both print & digital collections for many years to come. New purchases & purchases of journals, magazines and abstracting & indexing services are heavily weighted toward digital while digital books. (e-books, e-journals, e-zine, e-thesis, e-news group) are only beginning to become a presence in library collection. Internet is also a type of an E-resource.

(A) **E-book –** An e-book is based both on emulating the basic characteristics of traditional books is an electronic. An e-Book is based on both emulating the basic characteristics of traditional books in an electronic format, as well as leveraging internet technology to make an e-Book easy and efficient to use.

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An e-Book can take the form of a single monograph or/a mutli0volume set of books in a digital format that allows for viewing on various types of monitors, device, and personal computers. It should allow searching for specific information across a collection of books and within a book. An e-Book should utilize the benefits of the internet by providing the ability to embed multimedia data, to link to other electronic resources and to cross-reference information across multiple resources.

(B) **E-Journal –** Electronic journals have come up as very important information product recently major international journal publishers are making available their journals electronically. They have become excellent marketable commodities so much b so that institutes are pooling their resources to buy electronic journals. INDEST of IIT'S are an example .CSIR. e journal project is another example.

(C) **Newsgroup:** Another Internet service similar to listservs is a newsgroup. News Groups are like an international bulletin board. Each group is a forum for a different subject, where a subscriber can post his / her questions or answers. There are thousands of groups covering just about every area of interest. The difference between listserv and news group is that when a user joins a group, the mail is no longer automatically deposited into his mailbox. Instead, a user is expected to go to the newsgroup himself to read it. Some listservs can also be accessed as a newsgroup. A good analogy to a newsgroup is a bulletin board, i.e. one can go to it, as opposed to having mail delivered to his / her desk. The mails from newsgroup are not cluttered and it can be easily regulated how often messages are read. A drawback of a newsgroup lies in the fact that a user hundreds of newsgroup communities. They center on topics such as computing, news, recreation, social, and "alternative" topics. There are newsgroups dealing with virtually every topic under the sun and new newsgroups appear every day.

(D) Electronic theses and dissertations

These submitted to the universities, as requirement for the award of Ph.D. degree constitute a useful source of information for the new and ongoing research. Doctoral dissertations submitted to universities and academic institutions are originally created in digital format using one of the word processing software packages like MSWord, LaTex, Word Pro, etc. or one of the desktop publishing packages like Page Maker, Ventura, etc. These documents are undisputedly highly valuable collection especially in digital format that qualify to be an important component of a digital library. The documents composed on word processing packages / desktop publishing packages can be easily converted into PDF, Post Script or XML using appropriate software tools to host them on the web. Several universities and institutions have already implemented electronic submission of doctoral dissertations under the overall umbrella of an international digital library initiative called "Networked Digital Library of These and Dissertations" (NDLTD).

(E) **e- magazine or e- zines** - E- magazines also known as e-zines are the abbreviated form for e – magazine or periodicals or articles. A computer may access the e-zines. Some examples of e-zines are as follows- www.indianews.com,www.dainikbhaskar.com

4. ROLE OF INTERNET IN ACADEMIC LIBRARIES

Internet acts as knowledge repository tool in Academic libraries. In today's scenario, the internet is changing the way we live and do businesses.

The internet offers a tremendous opportunity fro many different traditional institutions such as libraries, governments, and business deliver their better content and services and interacts with their constituents. Citizens, patrons, businesses and other government partners. In addition to providing information communication and transaction services (eg. email exchange) exciting and innovative transformation could occur with new technologies and practices. Data and information can begin to become knowledge assets. Digital library (e-library), digital government (e-government), e-commerce research has many common threads.

5. ROLE OF GOVERNMENT IN E-RESOURCES

The government is also undertaking various steps to introduce this facility in academic institutions for the benefit of research scholars. The university avails this facility and gain access to e-resources. UGC- INFONET is a programme that provides electronic access to scholarly literature in all areas of learning to the Universities in India. This programme is wholly funded by the UGC, administered, and monitored by INFLIBNET. Universities, which are always short of funds, are greatly benefited by this facility. Govt. has recently launches the Akash UBI slate which will help the to be in touch with current happenings of the world.

6. ADVANTAGES OF E-RESOURCES

- The biggest advantage is the so-called 'everywhereness' of an e-resource. A researcher in Antarctica or anyone located anywhere on Earth or in space and who has an internet connection via a satellite link or landline can access the contents of a digitized text for consultation. In a similar fashion, a student away from any research library can access that library's holdings via a computer attached to a modem.
- A large state or nation can reduce their reliance on multiple copies of a book and instead make available the text as an e-Book.
- In areas where preservation problems are common and/or climate controlled conditions are difficult for a library, the e-resources are generally not susceptible to damage in the same way a book or other printed materials may be. Of course, the server where the e-resource resides and the connecting network is subject to interruptions in service for many reasons.
- Different forms of an e-resource can be made available on a CD-ROM and occupy a fraction of the space of a paper volume of the same title.
- The e-resource either in its online or CD-ROM from may contain animations and live-action illustrations not possible in p –resource (printed resource).

7. E-RESOURCE OPPORTUNITIES

The advantages of e-resources for libraries are straightforward and include.

- Easy access to content
- On-demand availability
- Prevention from being lost, stolen, or damaged

- Capability to search within a book and across a collection of books.
- Ability to be linked to other resources, including dictionaries and thesauri .
- Absence of physical space requirements
- Device independence for accessing the content
- Access to content using standard web browsers
- Customizable search interfaces
- Easy transportation and
- Access from anywhere.

E-resource creates new opportunities of publishers and has revived the scholarly monograph. They also provide an opportunity for publishers to maintain a competitive position in the marketplace. The emergence of the e-Book has given publishers new ways to serve customers by re-purposing content and creating living books, which incorporate text, audio, video, and other resources, such as dictionaries, thesauri. Etc.

8. E-RESOURCE CHALLENGES

a) For Librarians

The integration of e-resources into the digital library has not only created opportunities for librarians, but also created several challenges. Full-text access and retrieval of e-Books combine library-based theories and principles with web search and retrieval techniques. Librarians must develop innovative policies, procedures and technologies to accommodate the publication of and access to the e -resources. e-resource challenges for librarians can be grouped into three categories.

(a) acquisition and collection development.
(b) standards and technology and
(c) access

Within each of these categories are subcategories. Acquisition and collection development challenges include budget allocations; usage and distribution models; purchase models; and collection development strategies. Standards and technology challenges include not only cataloging and metadata standards and schemes, but also e-resource hardware and software technologies, digital rights management software, and user and staff training. Access challenges include the cataloguing and indexing of e-Books, circulation models for the electronic environment, and preservation and archiving of e-Books and the resources linked to them.

(b) For Publishers

Since the internet knows no boundaries, publishers must also contend with challenges created by the emergence of the e-resources. These include securing both electronic and territorial contractual rights for content and permission clearance. Publishers must become involved in the development of format identifiers, such as International Standards Book Numbers (ISBNs). Digital object identifiers (DOI). International Standard Text Code (ISTC) and Online information exchange (ONIX). "ONIX" refers to a standards format that publishers can use to distribute electronic information about their books to wholesale, e-tail and retail booksellers, other publishers, and anyone else involved in the sale of Books. (E-tail is shorthand for

electronic retail). E-resource metadata creation and distribution, as well as e-Book file delivery are new publisher venues that require additional resources. Publishers must also develop methods for the storage and transmission of e-Book files for re-purposing content. The marketing for and the publicity and sales integration of e-resources also require publishers to revise current practices or to develop new practices.

9. SUGGESTIONS

(1) The in house training programmes conducted on a part time basis would help the staff members to practice and assimilate more simultaneously their day to day work would also suffer.
(2) In service, training at regular intervals should be provided to keep the staff abreast with the latest technology.
(3) The computer programme is to be so organized that there should be no time lag between staff training and assignment of computer work to trained staff. By this way, trained staff will get a regular practice of the computer knowledge obtained during the training programme.
(4) Since Government is taking steps to make the students more and more technology friendly, it has launched Akash UBI Slate for the students. This will be the responsibility of the librarians and library and inf. Scientists to impart the knowledge to the students to make them aware of the e- resources Therefore training programmes should be organized for the librarians and staff to make them more knowledgeable of these resources.

CONCLUSION

E-resource has increased the use of collection through improved information retrieval and has ultimately let to increased user satisfaction. It has helped in extending library services, enhanced the prestige of the library, and has helped in resource sharing through networking as well.

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पुस्तकालय स्वचालन में आर.एफ.आई.डी. [RFID] तकनीक का बढ़ता प्रयोग: एक विवेचनात्मक अध्ययन

संजीव कुमार साहू *, डॉ. आर. जी. गर्ग **, रमाकांत ***

सार (Abstract)

रेडियो फ्रीक्वेंसी पहचान प्रणाली (आर.एफ.आई.डी.) स्वचालित (ऑटोमेशन) पुस्तकालयों की दिशा में एक कदम है जो स्मार्ट सूची, चोरी की रोकथाम, उपयोगकर्ता के लिए सेवा की गुणवत्ता, स्मार्ट परिसंचरण, पुस्तकों की स्वचालित छँटाई, आगम-निर्गम और ड्रॉप बॉक्स की सुविधा आदि शामिल है| आर.एफ.आई.डी. का प्रदर्शन एवं व्यवहार कई बड़ी स्वचालन प्रणालियों जैसे-बारकोड प्रणाली एवं सुरक्षा स्ट्रिप्स की तुलना में कही अधिक बेहतर है| इस लेख में आर.एफ.आई.डी. प्रौद्योगिकी, इसके बुनियादी घटकों, आवृत्ति मानकों से लाभ प्राप्ति की कोशिश कर रहे है और इसका प्रयोग पुस्तकालयों के स्वचालन के अपव्यय और उपयोगकर्ता संतुष्टि के लिए हुआ है| इस प्रपत्र में आर.एफ.आई.डी. के अनुप्रयोग आने वाली समस्याओं और चुनौतियों और उनकी व्यवहार्य समाधान पर प्रकाश डाला गया है, हमारा कार्य आर.एफ.आई.डी. प्रणाली के कार्यान्वयन से पुस्तकालयों में स्पष्ट रूप से हो रहे लाभ को सही साबित करना है, साथ ही बारकोडीत प्रणाली पर आर.एफ.आई.डी. प्रणाली में फर्क करना है|

कीवर्ड्स : आर.एफ.आई.डी, रेडियो फ्रीक्वेंसी पहचान, बारकोड, ई. ए .एस. (इलेक्ट्रॉनिक अनुच्छेद निगरानी)

1. परिचय

पुस्तकालयों की संपत्ति में निरन्तर वृद्धि करने के लिए कारण और नए आइटम और इलेक्ट्रॉनिक उपकरणों के भंडारण से स्वचालित पुस्तकालयों की भूमिका और अधिक महत्वपूर्ण होती जा रहा है| हमें समाज के विकास और समृद्धि को बनाए रखने के लिए ज्ञान एवं सूचना की जरूरत है| ज्ञान एवं सुचना भविष्य की समृद्धि उत्पन करने के प्रमुख करक है| जिससे पुस्तकालयों के साथ स्वचालित पुस्तकालयों की भूमिका से इनकार नहीं किया जा सकता है| पुस्तकालय ज्ञान अर्जन और सीखने की एक संस्था होने के साथ अपने उपयोगकर्ता और स्थानीय समुदाय के लिए अमूल्य मदद और सेवा प्रदान करता है|

पुस्तकालयों की अग्रणी भूमिका, संग्रहित सुचना को एकत्रित करके व्यवस्थित कर उपयोगकर्ताओं को ज्ञान बैंक के लिए सबसे तेजी से पहुँच प्रदान करना होता है| सीखने का एक गढ़ होने के कारण पुस्तकालय कई परिवर्तनों से गुजरा है| कई वर्गीकरण पद्धतियों से सुचना को व्यवस्थित एवं प्राप्त किया जा रहा है|

पुस्तकालयों में स्वचालन के विकास की प्रक्रिया 1880 में प्रारंभ हुआ , जब होलेरिथ ने डेटा सारणीकरण के लिए छिद्रित कार्ड (पंच कार्ड) का योगदान दिया और 1936 में टेक्सास विश्वविद्यालय पुस्तकालय में परिसंचरण नियंत्रण(सर्कुलेशन कन्ट्रोल) के लिए छिद्रित कार्ड को अपनाया गया| कंप्यूटर के आगमन के साथ पुस्तकालयों में स्वचालन की प्रक्रिया शुरू कर दी गई| 1960 में, कंप्यूटर के उपयोग ने पुस्तकलय में पुस्तकों की समग्र प्रबंधन, कर्मचारियों एवं अपने सभी उपयोगकर्ताओं के ऊपर क्रांति ला दी| स्वचालन युग में ज्ञान बैंकों के सम्पूर्ण व्यवस्थापन एवं प्रबंधन में बारकोड एवं इंटरनेट ने महत्वपूर्ण भूमिका निभाई है | आर.एफ.आई.डी. ने बारकोड प्रणाली की जगह ले ली है और पूर्ण स्वचालित पुस्तकालयों के मार्ग प्रशस्त किया है| [1]

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रेडियो फ्रीक्वेंसी पहचान का प्रयोग किसी डिवाइस में रेडियो आवृत्तियों (फ्रीक्वन्सी) के द्वारा बिना लाइन के संपर्क में आये अथवा सेंसर और टैग वस्तुओं के मध्य सम्पर्क स्थापित करना होता है| **[9]**

आरएफआईडी (रेडियो फ्रीक्वेंसी पहचान) डेटा संग्रह प्रौद्योगिकी है जिसमे डाटा भंडारण (स्टोरेज) हेतु इलेक्ट्रॉनिक टैग का उपयोग होता है| इस टैग को इलेक्ट्रॉनिक "लेबल" के नाम से भी जानते है जो "ट्रांसपोंडर" या एक "कोड प्लेट" और एक माइक्रोचिप व एक एंटीना से बना होता है| टैग की रेंज किलोहट्र्स, मेगाहट्र्ज़ या गीगाहट्र्ज़ में प्रेषित हो सकती है | टैग बैटरी संचालित हो या रेडियो फ्रीक्वेंसी उत्सर्जित तरंगों से, रीडर शक्ति(सूचना) को ग्रहण कर लेता हैं **[[9]**

पुस्तकालय ज्ञान अर्जन और सीखने की एक संस्था होने के साथ, अपने सदस्यों, उपयोगकर्ताओं के लिए अमूल्य सेवाएं प्रदान करता है, वर्तमान पुस्तकालय प्रबंधन प्रणालियां बारकोड्स और सुरक्षा स्ट्रिप्स का उपयोग उधारी (इशू) का रिकार्ड रखने, उधार लेने और आइटम्स की सेल्विंग स्थिति जिससे किताबें या ऑडियो या वीडियो टेप, सीडी, डीवीडी आदि, और टैगिंग आइटम के आंदोलन के लिए सुरक्षा स्ट्रिप्स के रूप में ऐसी वस्तुओं की स्थिति लेकिन, बारकोड्स और सुरक्षा स्ट्रिप्स (इलेक्ट्रॉनिक अनुच्छेद निगरानी या ईएएस) को धीमी गति से पढ़ने की अपनी सीमाएं है | **[9]**

इसके सन्दर्भ में केंद्रीय पुस्तकालयों में इस्तेमाल आरएफआईडी प्रौद्योगिकी को धीरे-धीरे अपनाया जा रहा है और इसका प्रयोग आपूर्ति श्रृंखला प्रबंधन (सप्लाई चेन मैनेजमेंट), खुदरा, सुरक्षा विरोधी जालसाजी, सुरक्षा और स्वास्थ्य सेवाओं जैसे बृहद क्षेत्रों में भी हो रहा है | स्वचालित (ऑटमैटिड) डेटा संग्रह के माध्यम से, आरएफआईडी प्रौद्योगिकी के अधिक से अधिक दृश्यता और आपूर्ति श्रृंखला, अधिक कुशल सूची प्रबंधन, आसान उत्पाद ट्रैकिंग और निगरानी, कम उत्पाद जालसाजी और चोरी एवं बहुत कम श्रम लागत के पार उत्पाद वेग प्राप्त कर सकते हैं |चित्र 1. में स्वचालित पुस्तकालय प्रणाली को दर्शाया गया है |

चित्र 1. तस्वीर एक स्वचालित पुस्तकालय प्रणाली ([6] से रूपांतरित)

2.1. आरएफआईडी प्रणाली अवयव

2.1.1. स्मार्ट टैग

स्मार्ट टैग को ट्रांसपोंडर भी कहा जाता है और आम तौर पर यह एक पतली उस्तरा जैसा होता है **[4],[10]|** आरएफआईडी में मुख्य रूप से दो घटक (एलिमेंट) मौजूद होते है : एक सिलिकॉन चिप या एकीकृत परिपथ(इन्टग्रेटिड सर्किट) जिसकी एक अद्वितीय पहचान संख्या (आईडेनटिफीकेशन नंबर) होती है और एक एंटीना जिससे रेडियो तरंगों को भेजा एवं प्राप्त किया जा सकता है, शामिल हैं| एंटीना एक फ्लैट धातु प्रवाहकीय कुंडल के होते हैं और चिप एक मिलीमीटर के आधे से भी कम,

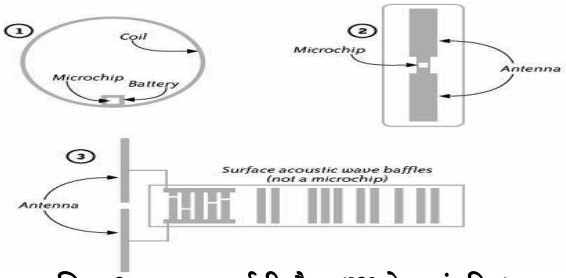
लेकिन टैग एक लेबल है कि आकार में बड़ा हो सकता है | लेबल एक फ्लैट प्लास्टिक टैग है जो कि भौतिक वस्तुओं पर चिपका सकते है| टैग मुख्यतः दो प्रकार के होते हैं:

- सक्रिय टैग (ऐक्टिव टैग) एवं निष्क्रिय टैग (पैसिव टैग)

एक सक्रिय टैग पर ही कुछ शक्ति का स्रोत होता है जो आकार में बड़ा और महंगा है| सक्रिय टैग सौ या इससे अधिक फुट की दूरी पर पढ़ा जा सकता है|

एक निष्क्रिय टैग में शक्ति का स्रोत स्थापित नहीं होता है| रीडर से रेडियो तरंगों के माध्यम से उत्पन्न सामान्य विधुत प्रवाह पर्याप्त शक्ति प्रदान करता है जो चिप पर डाटा पढ़ता है और डेटा रीडर के लिए वापस संचारित करता है| सक्रिय टैग की तुलना में निष्क्रिय टैग सस्ता और हल्का होता हैं और उनकी रेंज कुछ इंच या कुछ फुट है, अधिकांश निष्क्रिय टैग 13.56 मेगाहट्र्ज के एक आवृत्ति का उपयोग करते हैं| चित्र 2. आरएफआईडी प्रणाली घटकों को दर्शाता है **[3]**.

टैग का एक नया संस्करण अर्द्ध निष्क्रिय टैग और अर्द्ध सक्रिय टैग है, जो उपरोक्त दोनों टैग की विशेषताओं को जोड़ती है| यह आम तौर पर बीप या पलक (ब्लिंगकिंग) उपकरणों या कुछ परिचालन में इसका प्रयोग किया जाता है| उदाहरण के लिए एक वातानुकूलित (एयरकंडीशनर) गत्ते का डब्बा पर एक अर्द्ध सक्रिय एक सेंसर है जो की लदान (शिपमेन्ट) के दौरान तापमान रेंज की जानकारी को रिपोर्ट में शामिल करते हैं| चित्र २. आरएफआईडी टैग दर्शाता है |



चित्र 2. आरएफआईडी टैग ([3] से रूपांतरित)

टैग के विशिष्ट अनुप्रयोग निम्न कारकों पर निर्भर करता है:

- टैग और पाठक के बीच दूरी |
- गति, जिस पर टैग रीडर गुजरेगा |
- टैग और पाठक के बीच पर्यावरण अवरोध |

एक टैग के डेटा भंडारण घटक चल रहा है ,पढ़ने लिखने (रीड-राइट) के लिए, केवल पढ़ने (रीड ओनली) के लिए और एक बार लिखने-पूर्ण पढ़ने (रीड मैनी) और क्षमताओं के लिए

- **रीड ओनली टैग्स** -- अगर टैग निर्माण के समय पहचान एनकोडेड है और अन्य कुछ लिखने योग्य नहीं है, तो वह रीड ओनली टैग्स होते है | इस प्रकार के टैग्स की पहचान अधिक नहीं है और आरएफआईडी के आरंभिक कार्यान्वयन के बाद इस इस्तेमाल वस्तुओं के अधिग्रहीत मदों के लिए इस्तेमाल किया जाता है और पुस्तकालयों में इस तरह के संग्रह में बारकोड्स इस्तेमाल नहीं होते है |इस प्रकार के टैग में **96** बिट्स से अधिक जानकारी नहीं होती हैं।

- **राइट वन्स - रीड मैनी (WORM) टैग्स** -- इस प्रकार के टैग में पुस्तकालयों के उपयोग हेतु प्रोग्राम लिखा होता है, लेकिन एक बार लिख जाने के बाद पुनर्लिखित (री-राईट) नहीं कर सकते है| यह तभी उपयोग कर सकते है , जब एक संग्रह को पहले से ही पट्टी कोडित (बार कोडिंग) द्वारा एक पूर्वव्यापी रूपांतरण किया गया हो | इन टैग्स का मुख्य लाभ यह है कि पहचान संख्या के अलावा संबंधित जानकारी को भी जोड़ा जा सकता है, लेकिन इस जानकारी को बाद में बदला नहीं जा सकता है| इस टैग की क्षमता आम तौर पर कम से कम 256 बिट्स है [4]

  रीड राइट टैग्स(Read Write Tags): यह टैग्स ज्यादातर पुस्तकालयों द्वारा चुना जा रहा है और इन टैग्स की आवश्कतानुसार वांछित जानकारी को परिवर्तित किया जा सकता है। बदली हुई सूचना प्रत्येक शाखा या आयोजन स्थान के लिए पहचान (आइडेन्टीफिकेशन) कोड के रूप में हो सकती है, जिसे बाद में परिवर्तित किया जा सकता है । यह टैग सबसे महंगे होते हैं। विक्रेता(वेंडर) के द्वारा चोरी पर लगाम लगाने के लिए बंद या चालू किया जा सकता है | इस प्रकार के टैग में आम तौर पर कम से कम 1024 बिट की क्षमता होती है और इलेक्ट्रॉनिक सूची (इन्वेंटरिंग) और सामग्री प्रबन्धन (मटेरिअल हैंडलिंग) के लिए कम से कम 1024 बिट्स आवश्यक है |

2.1.2. रीडर

रीडर, एक हैण्ड होल्ड या फिक्स्ड यूनिट एक युक्ति (डिवाइस) हो सकती है | जो कि आरएफआईडी टैग के पास से जानकारी प्राप्त करता है और उनकी पहचान संख्या रेडियो आवृत्ति संचार का उपयोग कर प्राप्त कर सकते हैं [14] इस पूरी प्रक्रिया में रीडर और टैग के बीच कोई सीधे संपर्क की आवश्यकता नहीं है। जब रीडर की सीमा के भीतर निष्क्रिय टैग होते हैं ("पूछताछ के क्षेत्र" कहलाते हैं), तब टैग के अंदर एंटीना ऊर्जा को अवशोषित कर प्रतिक्रिया शुरू कर देता है, और तब यह अवशोषित ऊर्जा(अब्सोर्बेड एनर्जी) को वापस पहचान संख्या और अन्य संबंधित जानकारी के रूप में रीडर के लिए संकेत भेजने में प्रयोग किया जाता है। रीडर हैंडहेल्ड डिवाइस जैसे पीडीए और मोबाइल फोन के रूप में, उदाहरण के लिए डाला जा सकता है: नोकिया 5140 , नोकिया 3220 | रीडर को पुस्तकालय आरएफआईडी सिस्टम में निम्न आठ तरीके से प्रयोग किया जा सकता है [4]। चित्र 3.एक प्रतीकात्मक आरएफआईडी रीडर को दर्शाता है ।

चित्र 3. इंटरमेक्क निगम (कार्पोरेशन) का यु.एच.एफ हैंडहेल्ड रीडर ([3] से अनुकूलित)

- **रूपांतरण केन्द्र (कन्वर्शन स्टेशन)** - वह स्थान जहां पुस्तकालय डेटा को टैग में लिखा जाता है |
- **परिचालन में कर्मचारी कार्यस्थल (वर्क स्टेशन)** - निर्गम की जाँच करने के लिए किया जाता है।
- **उपयोगकर्ता(पैट्रन) स्वतः निर्गम केन्द्र** - कर्मचारियों की सहायता के बिना निर्गम में प्रयुक्त किया जाता है|
- **बाहरी संवेदक (एक्सिट सेंसर)** - पुस्तकालय के बाहर जा रही सभी निर्गत(इश्यु) पुस्तकों को सत्यापित करने के लिए|

- **उपयोगकर्ता(पैट्रन) स्वतः आगम केन्द्र** - कर्मचारियों की सहायता के बिना आगम में प्रयुक्त किया जाता है|
- **बुक ड्रॉप रीडर** - आगम किताबें जब उपयोगकर्ता (पैट्रन) उन्हें किताब ड्रॉप बॉक्स में छोड़ता है की जाँच करता है|
- **सॉर्टर** - लौटाई गई किताबों का पुस्तकालय में उचित स्थान के लिए स्वचालित प्रणाली|
- **पोर्टेबल रीडर** - पाठक के द्वारा शेल्वेस से हटाये गए आइटम को सही ढंग से व्यवस्थित एवं सत्यापित करने, के लिए हाथ रीडर का प्रयोग किया जाता है |

2.1.3. सर्वर

सर्वर, एक साधारण सर्वर या एक उच्च अंत कंप्यूटिंग सर्वर का इस्तेमाल डेटा के अंतर्वाह(इनफ्लो) और बहिर्प्रवाह (आउटफ्लो) दर के आधार पर किया जा सकता है | सर्वर को आरएफआईडी सिस्टम के साथ कॉन्फ़िगर किया जाता है। यह मुख्य संचार केन्द्र है और विभिन्न इलेक्ट्रॉनिक प्रणाली में प्रयोग किया जाता है जो उपकरणों के बीच इंटरफेस प्रदान करता है। जिससे इंटरफेसइंग सॉफ्टवेयर एवं लेनदेन डेटाबेस प्रबंधन प्रणाली के द्वारा रीडर एक निर्धारित नियमित अंतराल के बाद सर्वर को जानकारी भेजते है| रीडर को सूचना / जानकारी के आधार पर अनुप्रयोग के लिए पारित किया गया है और अनुप्रयोगी को छह श्रेणियां निम्न है[२]|

अभिगम नियंत्रण (एक्सेस कंट्रोल) -- बिना चाबी प्रविष्टि के लिए |

संपत्ति ट्रैकिंग -- स्वयं आगम (चेक इन) एवं स्वयं निर्गम (चेक आउट) प्रणाली के लिए |

परिसंपत्ति टैगिंग और पहचान -- मालसूची और निधानी व्यवस्था (शेल्विंग) के लिए |

प्रमाणीकरण -- जालसाजी की रोकथाम के लिए |

बिक्री की बात (पॉइंट ऑफ़ सेल) -- शीघ्र निपटान सुविधा (फास्ट ट्रैक) हेतु |

आपूर्ति श्रृंखला प्रबंधन (SCM) -- निर्माता से विक्रेता के लिए अलग-अलग मद (आइटम) पात्र की खोज करना |

आरएफआईडी का ज्यादातर प्रयोग आपूर्ति श्रृंखला(सप्लाई चेन) उद्योग में किया जाता है जिनके द्वारा 70% या अधिक टैग प्रेषित(शिपमेंट) किये जाते है | आपूर्ति श्रृंखला प्रबंधन के बाजार में, आइटम्स को पेलेट्स या कंटेनरों के द्वारा खोजा है न की एक अकेले आइटम को | एक बार आइटम्स को पेलेट्स से हटा देते हैं, तो उन्हें अधिक समय के लिए टैग नहीं कर सकते | लेकिन पुस्तकालय के मामले में,प्रत्येक मद (आईटम) को टैग करते हैं और प्रत्येक टैग एक किताब या सीडी या डीवीडी आदि कि विशिष्ट पहचान है | टैग में निष्क्रिय डेटा होते है जैसे बारकोड संख्या आदि, यह जानकारी / सूचना पुस्कालयों की सुरक्षा, परिसंचरण एवं सूची अनुप्रयोगों हेतु परिसंचरित होती है |

2.1.4. रेडियो फ्रीक्वेंसी आइडेन्टफकेशन (आर.एफ.आई. डी.) आवृत्ति

रेडियो फ्रीक्वेंसी पहचान प्रणाली बेतार संचार पर आधारित है जिसमे रेडियो तरंगों का उपयोग होता है, जो विद्युत चुम्बकीय तरंग (३०० KHz से ३ GHZ) का एक हिस्सा हैं | आरएफआईडी जो बिना तरंग अधिकार पत्र (स्पेक्ट्रम लाइसेंस) के अंतरिक्ष में चल रही है, को आई.एस.एम (इन्डस्ट्रीअल,साइन्टिफिक एवं मेडिकल) कहा जाता है | आंतरिक ऑपरेटिंग आवृत्तियों आम तौर पर चार मुख्य आवृत्ति बैंड (IEE, 2005) में आयोजित होती है | टेबल 1: इस्तेमाल होने वाली अनेक आवृत्ति स्तर को दर्शाता है|

बैंड	एल एफ (लो फ्रीक्वन्सी)	एचएफ (हाई फ्रीक्वन्सी)	यूएचएफ (अल्ट्रा हाई फ्रीक्वन्सी)	माइक्रोवेव
फ्रीक्वन्सी	30-300 KH	3-30 MH	300 MH – 3 GH	2–30GH
टिपिकल आरएफआईडी फ्रीक्वन्सी	125–134 KH	13.56 MH	433 MH, 865-956 MH 2.45 GH	2.45GH

अप्राक्समैट रीड रेन्ज	0.5 मी. से कम	1.5 मी. तक	433 **MH** =100 तक 865-956 **MH** = 0.5 से 5 मी.	10 मी. तक
टिपिकल डाटा ट्रांसफर रेट	1 **KB** / सेकन्ड से कम	लगभग 25 **KB** /सेकन्ड	433-956 =30 **KB** /सेकन्ड 2.45=100 **KB** /सेकन्ड	100 **KB** /सेकन्ड तक
केरक्टरिस्टिक्स	शोर्ट-रेंज, लो डाटा ट्रान्सफर रेट ,पेनेट्रेटस वाटर बट नॉट मेटल	हाइअर रेंज, रीज़नबल डाटा रेट (सिमलर टू जी एस ऍम फोन), पेनेट्रेटस वाटर बट नॉट मेटल	लॉंग रेंज, हाई डाटा ट्रान्सफर रेट, कन्करन्ट रीड ऑफ़ < 100 आइटम्स, कैनाट पेनेट्रेट वाटर ऑर मेटल्स	लॉंग रेंज, हाई डाटा ट्रान्सफर रेट, कैनाट पेनेट्रेट वाटर ऑर मेटल्स
टिपिकल यूज़	ऐनमल आइ डी कार इम्मोबिलिज़ेर	स्मार्ट लेबलस कान्टैक्ट-लेस ट्रैवल कार्डस ऐक्सेस & सिक्यूरिटी	स्पेशलिस्ट ऐनमल ट्रैकिंग लोजिस्टिक्स	मूविंग वीहिकल टोल

तालिका 1. आरएफआईडी ऑपरेटिंग आवृत्तियों और जुड़े लक्षण ([14] से अनुकूलित)2.1.5 संचार (कम्यूनकेशन)

रेडियो फ्रीक्वेंसी पहचान प्रणाली में शामिल होने वाले संचार को प्रमुख रूप से दो वर्गों में वर्गीकृत किया गया है **[14]** :

1. निकट क्षेत्र संचार (नियर फील्ड कम्यूनकेशन)
2. दूरस्थ क्षेत्र संचार (फार फील्ड कम्यूनकेशन)

कम/ धीमी आवृत्तियों और उच्च आवृत्तियों पर आधारित आरएफआईडी पद्धति का उपयोग निकट क्षेत्र संचार और चुंबकीय (मैग्नेटिक) क्षेत्र से आगमनात्मक युग्मन (इनडकटिव कपलिंग) के भौतिक गुणों हेतु उपयोग करते हैं | रीडर स्वयं, रीडर और टैग के मध्य चुंबकीय क्षेत्र पैदा करता है और टैग के एंटीना में बिजली उत्पन्न हो जाती है , जो की एकीकृत परिपथ शक्तियों और पहचान को प्राप्त करने के उपरांत पहचान को वापस रीडर के लिए भेजी देती है |

यु.एच.एफ और उच्च आवृत्तियों पर आधारित आरएफआईडी का उपयोग दूरस्थ क्षेत्र संचार और परिलक्षित शक्ति (रिफलेक्टेड पावर) के भौतिक गुणों पर आधारित है | दूरस्थ क्षेत्र संचार में मॉडुलन के सिद्धांत पर आधारित रेडियो तरंगों का उपयोग होता है |

3. आर.एफ.आई.डी. मानक (स्टैन्डर्ड)

विधुत चुम्बकीय वर्णक्रम(इलेक्ट्रोमैग्नेटिक स्पेक्ट्रम) जिस पर आरएफआईडी प्रणाली रहती है के लिए स्थानीय सरकारी निकायों द्वारा नियंत्रित किया जाता है| आरएफआईडी प्रणालियों के लिए मानकों के विकास हेतु बड़ी संख्या में संस्थाएं कार्य कर रही है | आरएफआईडी प्रणाली के मानकों का अध्यन मूल रूप से चार क्षेत्रों में किया जाता है | **[14], [2]**

- **एयर इंटरफ़ेस स्टैन्डर्ड -** यह रीडर में डेटा संचार के लिए, बुनियादी टैग के रूप में उपयोग किया जाता है और जो सितम्बर 2004 में रिलीज़ किया गया था, इसको आईएसओ 18000 आरएफआईडी एयर इंटरफ़ेस परिवार मानकों, द्वारा नियंत्रित किया जाता है |
- **डेटा सामग्री(कन्टेन्ट) और एन्कोडिंग -** आपूर्ति श्रृंखला(सुप्लाई चेन) में बड़ी संख्या में अलग संगठनों और भौगोलिक स्थानों के बीच गतिमान सामग्री शामिल है , इसलिए उत्पादों की पहचान मानकीकृत प्रारूप के लिए आवश्यकत है। एमआईटी के ऑटो-आईडी केंद्र ने प्रमुख निर्णायक काम किया था, और अब इन दिनों में जिम्मेदारियों को ई.पी.सी .वैश्विक संगठन को सौंप दिया हैं। इलेक्ट्रॉनिक उत्पाद)प्राडक्ट (कोड) ईपीसीटीएम (जो आर.एफ.आई.डी .टैग की स्मृति में एम्बेड किया गया है एक अनूठा कोड संख्या है, आर.एफ.आई.डी .सिस्टम का सबसे महत्वपूर्ण हिस्सा है। यह जेनेरिक(सार्वभौमिक) क्रमांकन पद्धति / बारकोड क्रमांकन पद्धति) UPC) के समान है, लेकिन इनमें

बुनियादी फर्क यह है कि ईपीसी व्यक्तिगत रूप में अच्छी तरह से वस्तुओं की पहचान कर सकता है। ईपीसी मानक के लिए विकल्प है आईपीवी 6, जो एक नेटवर्क परत मानक है जो कि संबोधित करने और डाटा पैकेट के मार्ग को नियंत्रित करता है।

- **अनुरूपता (कन्फॉर्मन्स) -** आरएफआईडी उपकरणों के प्रदर्शन को मापने के लिए और ऑपरेटिंग सिस्टम मानकों के परीक्षण के लिए, मानकों को आईएसओ 18047 और आईएसओ 18046 क्रमशः प्रयोग में लाया जाता है |
- **अन्तरसंक्रियता (इंट्रोपेराबिलिटी) -** ऑटो आई.डी. केन्द्र ने ईपीसी टीएम के उपयोग के लिए आपूर्ति श्रृंखला प्रणाली में एक अद्वितीय पहचानकर्ता जिसे ईपीसी नेटवर्क वास्तुकला कहते है कि कार्यालय उद्यम प्रणाली(इन्टरप्राईस सिस्टम) को वापस करने के लिए जुड़ा हुआ है |

4. आर.एफ.आई.डी. का पुस्तकालय में प्रयोग

पुस्तकालय में आर.एफ.आई.डी. प्रणाली अनुप्रयोगों के लाभ की एक विस्तृत रेंज है|आर.एफ.आई.डी. प्रणाली के द्वारा निम्नलिखित में सक्रिय भूमिका निभाई जाती है:

- **पुस्तकालय सुरक्षा** -- यह महत्वपूर्ण मुद्दों में से एक है जहां आर.एफ.आई.डी. प्रणाली ने सुरक्षा स्ट्रिप्स की जगह ले ली है। आर.एफ.आई.डी. प्रणाली ने बारकोड की तुलना में कहीं बढ़कर लाभ दिखाया है जो की परिसंपत्ति प्रबंधन से सम्बंधित है| आर.एफ.आई.डी. प्रणाली लगभग शत प्रतिशत खोज दर का दावा करते हैं| संरक्षित पुस्तकालय की संपत्ति संभावित भविष्य के लिए उपलब्ध ज्ञान स्रोत के लिए आनुपातिक है|
- **तेजी से परिसंचरण और पुस्तकालय संपत्ति के स्थान** - उच्च गति हाथ रीडर और अन्य उपकरणों के साथ तेजी से और आसानी से कार्य करने में सहायता होती हैं, जिससे कर्मचारियों की उत्पादकता में वृद्धि हो रही है एवं उपयोगकर्ता को अधिक संतुष्टि| आर.एफ.आई.डी., परिसंचरण कार्य में लगने वाले आवश्यक समय की मात्रा को कम कर देता है और विरोधी टकराव जो की आर.एफ एल्गोरिथ्म होने के कारण हो सकता है को कम करता है और साथ ही आसानी से पढ़ा जा सके, को करने के लिए कई टैग को अनुमति प्रदान करता है |
- **उपयोगकर्ता स्व आगम-निर्गम** - नवीनतम आर.एफ.आई.डी. पहचान कार्ड के साथ, पुस्तकालय के कर्मचारियों पर बोझ काफी कम हो गया। आर.एफ.आई.डी. सिस्टम द्वारा ड्रॉप बॉक्स की सुविधा के कारण संग्रह प्रबंधन प्रणाली कार्य 24X7 समय किया जाता है।[2], [4]
- **स्वचालित सामग्री हैंडलिंग** - पुस्तकालय सामग्री ले जाने और उन्हें श्रेणियों के द्वारा सॉर्ट(छटनी) कर सकते हैं और उन्हें अलग-अलग डिब्बे में बंडल अनुक्रमित किया जाता है। इससे कर्मचारियों का समय काफी कम लगता है। यहां तक कि गुम हुए आइटम्स को आसानी से पहचाना जा सकता है। यह सभी कन्वेयर और छँटाई प्रणालियों के प्रयोग से संभव है |
- **स्मार्ट और त्वरित सूची** - चूँकि विशाल संग्रह में अकेले एक मद (आइटम) तक गति के साथ पहुँचा जा सकता है, जो कि सूची बार कोडित सिस्टम पर प्रबंधित किया जा सकता है, प्रशंसा के लायक है|
- **लम्बा टैग जीवन एवं लम्बा मद जीवन** - चूंकि टैग रीडर के साथ सीधे संपर्क में नहीं आता है, टैग का जीवन बढ़ जाता है| चूंकि टैग करने के लिए पूरी तरह से तख्ताबंदीवाला (फुली जैकिटेड) होती है जो की पुस्तिका के जीवन को बढ़ा देती है |
- **क्यु.ओ.एस. मापदण्ड (पैरामीटर)** - रेडियो फ्रीक्वेंसी पहचान प्रणाली के उपयोग के साथ सेवा मापदंडों की गुणवत्ता में बहुत वृद्धि हुई है|
- **वेब इंटरफेस** - सभी पुस्तकालय के साथ जुड़े डेटा बेस पुस्तकालय पोर्टल अंतरापृष्ठ (इंटरफेस्ड) होते है| जो कि पुस्तकालय का उपयोग तंत्र और अपनी सेवाओं के लिए एक और आयाम देने के साथ प्रदान करते हैं|

5. बारकोडित सिस्टम पर आरएफआईडी सिस्टम्स युग

बार कोड पर आरएफआईडी का लाभ इस प्रकार हैं:

- **गैर-स्थिर(नॉन स्टैटिक) डेटा के लिए समर्थन** -- आर.एफ.आई.डी टैग का डेटा कई बार लिखने योग्य होता है(वास्तव में आर.एफ.आई.डी. टैग एक रीड राइट टैग होता है) परन्तु एक बारकोड पर लिखित डेटा स्थिर रहता है और बदला नहीं जा सकता |
- **सीधी रेखा की आवश्यकता नहीं** -- सामान्यतया, एक आर.एफ.आई.डी. रीडर को आर.एफ.आई.डी. टैग के डेटा पढ़ने के लिए एक सीधी रेखा की कोई ज़रूरत नहीं होती है जबकि बारकोड रीडर को एक सीधी रेखा की जरुरत बारकोड पढ़ने के लिए होती है।
- **दूर से पढने में सक्षम** - आरएफआईडी टैग, बारकोड की तुलना में एक बहुत लम्बी दूरी तक पढ़ने में सक्षम होते है | जो कि कई कारकों पर निर्भर करता है जैसे यह दूरी कई फुट से कुछ सौ फुट हो सकती है |
- **अधिक डेटा संग्रहण क्षमता** - एक आरएफआईडी टैग, एकबार कोड से कहीं अधिक डाटा का संग्रह कर सकते हैं |
- **एकाधिक पढने में सक्षम (मल्टिपल रीड्स)** -- एक उपयुक्त रीडर समय की एक बहुत ही कम अवधि के भीतर कई आरएफआईडी टैग को पढ़ एवं स्वचालित कर सकते हैं, जो की एक विरोधी टक्कर (एंटी-कोलिसन) नामक सुविधा का उपयोग कर किया जाता है| एक बारकोड रीडर, तथापि केवल एक समय में एक बार ही कोड को पढ़(स्कैन) सकता है [3], [4]|
- **निरंतरता** - एक आरएफआईडी टैग आम तौर पर विषम और कठोर पर्यावरण में काम करने (एक निष्पक्ष हद तक) के लिए प्रतिरोधक है जिसके कारण यह निरंतर उपयोग में रहता है| जबकि एक बारकोड आसानी से क्षतिग्रस्त हो जाता है (उदाहरण के लिए, नमी या धूल/ गंदगी से) [3],[4]|
- **कुशल (इन्टेलिजेन्स) व्यवहार** - एक आरएफआईडी टैग को डेटा वाहक और ट्रांसपोर्टर के अतिरिक्त अन्य कार्य करने के लिए इस्तेमाल किया जा सकता है | जबकि एक बारकोड, तथापि गुप्त नहीं होता है| यह केवल डेटा भंडारण का माध्यम होता है **[3],[4]**
- **स्वचालित छंटनी (सॉर्टिंग)**- जिन पुस्तकों को ड्रॉप बॉक्स में गिरा दिया है वो स्वचालित रूप से क्रमबद्ध हो जाती है, जिससे पुस्तकालय के कर्मचारियों पर बोझ को कम करने में सहायक होती है **[2]**
- **कर्मचारियों की कमी की समस्या से निपटने के लिए एक रास्ता प्रदान करना** -- पुस्तकालय प्रणाली में स्वचालन से बहुत से कार्यों को एक व्यक्ति द्वारा किया जा रहा है, जिससे आवश्यक कर्मचारियों की संख्या को कम करने के लिए प्रत्येक व्यक्ति के द्वारा उच्च अंत इलेक्ट्रॉनिक उपकरणों के साथ कई कार्यों को किया जाता हैं| जिससे कर्मचारियों की कार्य क्षमता बढ़ जाती है|
- **स्व जाँच** -- चूँकि स्वचालन में पहचान की जाँच सेंसर के द्वारा किया जा सकता है जिस कारण स्व जाँच लोकप्रिय बन गया है |

भारत में सभी प्रमुख पुस्तकालयों में आरएफआईडी प्रौद्योगिकी, उच्च शिक्षा संस्थानों (आई.आई.टी. चेन्नई, आई.आई.एस.सी. बंगलौर, आई.आई.एम. इंदौर, आई.आई.टी. दिल्ली,आई.आई.टी. कानपुर, आई.आई.एम. कोज़िकोडें आदि सहित) में कार्यान्वयन पर विचार कर रहे और विश्वविद्यालयों (पुणे विश्वविद्यालय, जवाहर लाल नेहरू विश्वविद्यालय दिल्ली विश्वविद्यालय आदि सहित) में पहले से ही पुस्तकालयों में आर.एफ.आई.डी. सिस्टम लागू किया है |

भारत में, लगभग 15-200 संस्थान है जो आरएफआईडी प्रौद्योगिकी के साथ पूरी तरह कार्यात्मक बनने की योजना बना रहे हैं। उत्तरी अमेरिका के 130 विश्वविद्यालयों में, जो पहले से ही पुस्तकालयों में आरएफआईडी सिस्टम को अपनाया है [2] और कई और अधिक अपने भविष्य की योजनाओं में यह अपनाने का विचार कर रहे

हैं|11| वेटिकन पुस्तकालय अपनी अनमोल, प्राचीन संग्रह 2 लाख पुस्तकों और पांडुलिपियों पर आरएफआईडी का प्रयोग प्रबंधित और सुरक्षित संपत्ति ट्रैक करने के लिए उपयोग कर रहा है [4] वेटिकन पुस्तकालय पुस्तकालय के दुरुपयोग को नियंत्रित करने के लिए और एक ही समय में सबसे अच्छा संभव सुविधाओं और नवीनतम प्रौद्योगिकी का उपयोग करके उपयोगकर्ताओं को सर्वोत्तम संभव सुविधाओं और दुर्लभ पांडुलिपियों को उपलब्ध करा रहा है|

6. आर.एफ.आई.डी. प्रणाली के सफल कार्यान्वयन के लिए चुनौतियां

पुस्तकालयों के लिए आरएफआईडी अनुप्रयोग से बड़ी संख्या में होने वाले के बावजूद, अभी भी वहाँ आरएफआईडी प्रणाली के सफल कार्यान्वयन के लिए कुछ चुनौतियां हैं |3| और वे हैं:

- **उच्च लागत कारक (हाई कॉस्ट फैक्टर)** - इन टैग की आवश्यकता ज्यादा मात्रा में होती है एवं पुस्तकालय सिस्टम के पूर्ण स्वचालन में प्रमुख कारक लागत हैं
- **अंतर का अभाव** - एक विक्रेता का टैग व अन्य विक्रेताओं से लिया गया टैग भिन्न हो सकता है| टैग में जानकारी एन्कोडिंग के लिए मानक डेटा मॉडल उपलब्ध नहीं है |
- **चोरी समस्या** - अगर एल्यूमीनियम पन्नी के दो या दो से अधिक परतों में टैग छिपाते है तो रेडियो संकेत ब्लॉक होने लगते है, जो की सुरक्षा से समझौता होगा जो उचित नहीं है| रेडियो संकेत ब्लॉक होने के कारण पुस्तकालय की सामग्री का चोरी होने का खतरा बढ़ जाता है |
- **टैग का प्रतिस्थापन (रिप्लेस्मेंट)** - यदि टैग को प्रतिस्थापित किया जाता है , तो ज्ञान के स्रोत के नष्ट होने की संभावना बढ़ जाती है। इसलिए मूल्यवान प्राचीन पांडुलिपियों और किताबों से टैग के प्रतिस्थापन के लिए कर्मचारियों का निपुण होना आवश्यक होता है|
- **दूरी की समस्या** - टैग को रीडर्स एक सीमित रेंज से पढ़ सकते हैं, अन्यथा टैग के आकार बढ़ जायेगा और कार्य को पूर्ण करने में अधिक बिजली की जरूरत पड़ेगी| पुस्तकालय के जानकारी के स्रोत के रूप में जो किताबें पुस्तकालय की पहुंच से बाहर जा रही है वहां पर बाहरी सेंसरों को कुशलता से काम करना आवश्यक है |
- **शक्ति स्रोत प्रबंधन** - प्रणाली को बिजली की आपूर्ति की लगातार आवश्यकता होती है जिसको बनाये रखना एक अतिरिक्त बोझ होता है|
- **भविष्य में सुसंगति संगतता (कॉम्पीटेब्लिटी) की समस्या** - अब यदि आरएफआईडी प्रणाली को स्थापित किया गया है, तो आने वाले वर्षों में विक्रेता बंद हो जाता है तो भावी पुस्तकालय के भविष्य के विस्तार की प्रक्रिया भी रुकी मिलेगी|
- **गोपनीयता मुद्दे** - संरक्षक को उनके आईडी कार्ड जैसे ही स्मार्ट कार्ड की आपूर्ति की जा सकती है| स्मार्ट कार्ड को मूल्यवर्धित कर के रूप में कुछ मूल्य जोड़ा जा सकता है जैसे कि डेबिट कार्ड होल्डर से वसूल किया जाता है। यह ध्यान से संभाला जाना चाहिए। पुस्तकालय प्रणाली में सूचना खोज पैट्रन उपयोगकर्ता के लिए सुरक्षित होना चाहिए| उपयोगकर्ता के द्वारा गिराए गए टैग को आसानी से ढूंढा जा सकता है और वे आरएफआईडी प्रणाली द्वारा लगाया जा सकता है। जिससे उपयोगकर्ता के द्वारा अवैध लोगों को निजी जानकारी फ़ैलाने की संभावना रहती है ।
- **टैग की सीमित जीवनकाल** - हर इलेक्ट्रॉनिक उपकरणों का जीवन सीमित समय होता है और इसलिए आरएफआईडी प्रणाली में टैग का भी जीवन समय सीमित होता है |

7. पुस्तकालयों में आरएफआईडी प्रणाली के सफल कार्यान्वयन के समक्ष रखी चुनौतियों के लिए समाधान

उत्पन्न चुनौतियों को निम्नलिखित सुझावों पर विचार करके नियंत्रित किया जा सकता है:

- **लागत में कमी** - चूंकि, प्रमुख लागत आरएफआईडी प्रणाली के कार्यान्वयन में शामिल टैग के विभिन्न प्रकार के उपयोग के कारण आती है| टैग की यह लागत वीएलएसआई निर्माण तकनीक और मूर की विधि का उपयोग करके इलेक्ट्रॉनिक उत्पादों की कीमत को कम किया जा सकता है|

- **विक्रेता निकायों और विनिर्माण (मैन्यफैक्चरिंग) संगतता के गठन** - वर्तमान में वहाँ विभिन्न निर्माताओं के लिए अलग अलग मशीन संबंधी वस्तुएँ आरएफआईडी सिस्टम में प्रयोग किया जाता हैं। यह सम्मान टैग, सॉफ्टवेयर और हार्डवेयर के साथ असंगति की ओर जाता है। विक्रेताओं के लिए एक आम सहमति, जिससे आम सेट प्रोटोकॉल का पालन और विनिर्माण तकनीक आ जाना चाहिए। इसलिए, हार्डवेयर और सॉफ़्टवेयर संगतता की समस्या से बचा जा सकता। यदि कुछ विक्रेता भविष्य में क्लोस डाउन कर देता है, ग्राहक विश्वसनीय हार्डवेयर और सॉफ्टवेयर के मुद्दों के संबंध में किसी भी परेशानियों का सामना नहीं करना पड़ता है।
- **मानक डेटा मॉडल की तैयारी** - यदि हार्डवेयर और सॉफ्टवेयर और शोधकर्ताओं के विक्रेता मानक डेटा मॉडल का उपयोग करके एक आम सहमति के लिए आते हैं, तो अविरोध की समस्या से आगे बचा जा सकता है |
- **उपयोक्ता के लिए जागरूकता कार्यक्रम** - उपयोगकर्ता को पुस्तकालय का उपयोग करने के लिए और खुद के लिए आरएफआईडी के लाभ से पूरी तरह से जागरूक किया जाना चाहिए। तो, सूचना अवरोध तक पहुँचने में उपयोगकर्ता द्वारा बाधाओं को कम किया जा सकता और नई तकनीक को अपनाने के लिए उपयोगकर्ता में दिलचस्पी बनाई जा सकती हैं।
- **गोपनीयता मुद्दा** - गोपनीयता मुद्दे को आईटी के कड़े कानूनों का पालन करके नियंत्रित कर सकते हैं और उन्हें करने के लिए दृढ़ता से पालन द्वारा संभाला जा सकता है| यह इस नैतिक समाज के गठन के लिए नेतृत्व करेगा। आरएफआईडी प्रणाली पूरी तरह से प्रमाणीकरण और डेटा एन्क्रिप्शन प्रोटोकॉल का समर्थन करता है, जिससे जानकारी रिसाव (इन्फॉर्मेशन लीकिज)और सुरक्षा खतरों की संभावना को कम करने किया जाता है
- **संपत्ति के जीवन समय**: पुस्तकालय की परिसंपत्तियों का जीवन बढ़ जाता है यदि परिसंपत्ति डेटा का उपयोग पाठकों के द्वारा सीधे छू कर नहीं किया जाता| सीधे संपर्क को कम करके और स्वचालित रूप से जीवन अवधि बढ़ जाती है|

8. निष्कर्ष

आरएफआईडी प्रणाली सिर्फ पुस्तकालय की पुस्तकों और अन्य परिसंपत्तियों का टैग नहीं है, यह पुस्तकालय के साथ संबंधित सभी के लिए सभी पुस्तकालय सेवाओं और उन्नयन कार्य को बढ़ाने के लिए एक व्यापक मार्ग प्रदान करता है. ऊपर पैराग्राफ से, हम यह निष्कर्ष निकाल सकते हैं कि

आरएफआईडी टैगिंग प्रणाली सीडी, डीवीडी और पाठ्य पुस्तकों के लिए सुरक्षित है, यह सूचना सामग्री के जीवन में वृद्धि करता है| आरएफआईडी प्रणाली में वस्तुओं की मैनुअल हैंडलिंग कम हो जाती है, जिससे किताबें और अन्य सामग्री के जीवन में वृद्धि होती है|

कुछ आरएफआईडी टैग रीराइट करने योग्य होते है, जो की सिस्टम स्थापित करते समय, सूचीबद्ध त्रुटियों के लिए, यदि कोई हो, को सुधारने के लिए अनुमति देता हैं।

शुल्क और अर्थदंड संग्रह प्रक्रिया स्मार्ट सदस्यता कार्ड की वजह से तेजी से और आसानी से हो जाता है|

उपयोक्ता को विविध प्रकार की गुणवत्तापरक सेवाएँ प्रदान की जाती है, जिसमे स्व आगम-निर्गम एवं पुस्तक ड्राप सुविधा शामिल है|

पुस्तकालय कर्मचारी की समय सारणी स्थिति के अनुरूप ढाल सकता है|

आरएफआईडी प्रौद्योगिकी तेजी से अपनी स्थापना बना रही है, जहां बारकोड एवं अन्य ऑप्टिकल प्रौद्योगिकियों प्रभावी नहीं हैं, विभिन्न उपकरणों का निर्माण करने के लिए एक आम सहमति से प्रदान की जाती है और उत्पादों का इस्तेमाल किया जा सकता है| आरएफआईडी प्रणाली में संयुक्त समाधान शामिल करके, स्वचालित सूचना बैंकों को कुशलता से बनाया जा सकता है| निकट भविष्य में हम आरएफआईडी में पुस्तकालय स्वचालन प्रणाली के प्रभावी क्रियान्वयन की उम्मीद करते है|

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Web 2.0 : A New Tool For Teaching and Learning in Electronic Environment

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Abstract:

IT and internet have changed the paradigm of the libraries. The libraries in the 21st century are confronted with issues involving constantly increasing information overload, changing patterns of resource management, new and growing technologies, specialized needs and expectations of users, which are threatening the very existence of the usual functioning of libraries. The great work done by Tim Bernus Lee to discover the W3. Now User wants most freely to himself other than depending on web authentication. Web 1.0 technologies were platform-based whereas Web 2.0 offers the web as a platform old web companies offered products you could run on your Windows, Mac, or Linux computer but the new generation of web companies offers services, which are delivered on the web itself. There are a number of important innovations, which are expected to play a pivotal role in the introduction of Web 2.0. In addition to this, some web site are now capable of carrying out project management functions. The key advantage they have over traditional operating system is that they are mare functional, and they can be run almost every browsers that is available today's. Another innovation that will be seen in web 2.0 is rich internet application.

Keywords: Web 2.0

Introduction: What is Web 2.0 ?

Web 2.0 is term that was introduced in 2004 and refers to the second generation of the World Wide Web. The term "2.0" comes from the software industry, where new versions of software programs are labeled with an incremental version number. Like software, the new generation of the Web includes new features and functionality that was not available in the past. However, Web 2.0 does not refer to a specific version of the Web, but rather a series of technological improvements. Web 2.0 is the term given to describe a second generation of the World Wide Web that is focused on the ability for people to collaborate and share information online. Web 2.0 refers to the transition from static HTML Web pages to a more dynamic Web that is more organized and is based on serving Web applications to users. Other improved functionality of Web 2.0 includes open communication with an emphasis on Web-based communities of users, and more open sharing of information. Over time, Web 2.0 has been used more as a marketing term than a computer-science-based term. Blogs, wikis, and Web services are all seen as components of Web 2.0. It was previously used as a synonym for Semantic Web, but while the two are similar, they do not share precisely the same meaning. Some examples of features considered part of Web 2.0 are listed below:

- ✓ **Blogs** - also known as Web logs, these allow users to post thoughts and updates about their life on the Web.
- ✓ **Wikis**- sites like Wikipedia and others enable users from around the world to add and update online content.
- ✓ **Social networking** - sites like Facebook and MySpace allow users to build and customize their own profile sand communicate with friends.

***LIBRARY**, Indian Institute of Science Education and Research IISERTrivandrum Kerala,

- ✓**Web applications** - a broad range of new applications make it possible for users to run programs directly in a Web browser.
  Web 2.0 technologies provide a level user interaction that was not available before. Websites have become much more dynamic and interconnected, producing "online communities" and making it even easier to share information on the Web. Because most Web 2.0 features are offered as free services, sites like Wikipedia and Facebook have grown at amazingly fast rates. As the sites continue to grow, more features are added, building off the technologies in place. So, while Web 2.0 may be a static label given to the new era of the Web, the actual technology continues to evolve and change.

Concept of Web 2.0

As such, Web 2.0 draws together the capabilities of client- and server-side software, content syndication and the use of network protocols. Standards-oriented web browsers may use plug-ins and software extensions to handle the content and the user interactions. Web 2.0 sites provide users with information storage, creation, and dissemination capabilities that were not possible in the environment now known as "Web 1.0".Web 2.0 can be described in 3 parts, which are as follows:

- ✓**Rich Internet application** (RIA) — defines the experience brought from desktop to browser whether it is from a graphical point of view or usability point of view. Some buzzwords related to RIA are Ajax and Flash.
- ✓**Web-oriented architecture (WOA)** — is a key piece in Web 2.0, which defines how Web 2.0 applications expose their functionality so that other applications can leverage and integrate the functionality providing a set of much richer applications (Examples are: Feeds, RSS, Web Services, Mash-ups)
- ✓**Social Web** — defines how Web 2.0 tends to interact much more with the end user and make the end-user an integral part.

History of Web 2.0

The Web we know now, which loads into a browser window in essentially static screenfuls, is only an embryo of the Web to come. The first glimmerings of Web 2.0 are beginning to appear, and we are just starting to see how that embryo might develop. The Web will be understood not as screenfuls of text and graphics but as a transport mechanism, the ether through which interactivity happens. It will appear on your computer screen, on your TV set, your car dashboard, your cell phone, hand-held game machines, maybe even your microwave oven.In 2003, the term began its rise in popularity when O'Reilly Media and MediaLive hosted the first Web 2.0 conference. In their opening remarks, John Battelle and Tim O'Reilly outlined their definition of the "Web as Platform", where software applications are built upon the Web as opposed to upon the desktop. The unique aspect of this migration, they argued, is that "customers are building your business for you".http://en.wikipedia.org/wiki/Web_2.0_-_cite_note-10 They argued that the activities of users generating content (in the form of ideas, text, videos, or pictures) could be "harnessed" to create value. O'Reilly and Battelle contrasted Web 2.0 with what they called "Web 1.0". They associated Web 1.0 with the business models of Netscape and the Encyclopedia Britannica Online. For example,

Netscape framed "the web as platform" in terms of the old software paradigm: their flagship product was the web browser, a desktop application, and their strategy was to use their dominance in the browser market to establish a market for high-priced server products. Control over standards for displaying content and applications in the browser would, in theory, give Netscape the kind of market power enjoyed by Microsoft in the PC market. Much like the "horseless carriage" framed the automobile as an extension of the familiar, Netscape promoted a "webtop" to replace the desktop, and planned to populate that webtop with information updates and applets pushed to the webtop by information providers who would purchase Netscape servers.

Definitions of Web 2.0

Acc to Webopedia, Web 2.0 is the term given to describe a second generation of the World Wide Web that is focused on the ability for people to collaborate and share information online. Web 2.0 basically refers to the transition from static HTML Web pages to a more dynamic Web that is more organized and is based on serving Web applications to users. Other improved functionality of Web 2.0 includes open communication with an emphasis on Web-based communities of users, and more open sharing of information. Over time Web 2.0 has been used more as a marketing term than a computer-science-based term. Blogs, wikis, and Web services are all seen as components of Web 2.0. Web 2.0 was previously used as a synonym for Semantic Web, but while the two are similar, they do not share precisely the same meaning.

Characteristics of Web 2.0

Web 2.0 is one of the most promising technological advances that will occur on the Internet, there is a lot of confusion that surrounds it. While you may think this confusion is limited to laypersons.

Web 2.0 websites allow users to do more than just retrieve information. By increasing what was already possible in "Web 1.0", they provide the user with more user-interface, software and storage facilities, all through their browser. This has been called "Network as platform" computing. Major features of Web 2.0 include social networking sites, user contributed sites, self-publishing platforms, tagging, and social bookmarking. Users can provide the data that is on a Web 2.0 site and exercise some control over that data. These sites may have an "Architecture of participation" that encourages users to add value to the application as they use it. Some scholars have made the case that cloud computing is a form of Web 2.0 because cloud computing is simply an implication of computing on the Internet.

The Web 2.0 offers all users the same freedom to contribute. While this opens the possibility for serious debate and collaboration, it also opens the possibility for "spamming" and "trolling" by less mature users. The impossibility of excluding group members who don't contribute to the provision of goods from sharing profits gives rise to the possibility that serious members will prefer to withhold their contribution of effort and free ride on the contribution of others. This requires what is sometimes called radical trust by the management of the website. According to Best, the characteristics of Web 2.0 are: rich user experience, user participation, dynamic content, metadata, web standards and scalability. Further characteristics, such as openness, freedom and collective intelligence way of user participation, can also be

viewed as essential attributes of Web 2.0.Though there is a controversy still going on over the definition of Web 2.0, yet it has some basic common characteristics. These include:

1. Web 2.0 use network as a platform as it deliver or receive applications thoroughly via a browser.
2. Users gets, manipulates and controlled the data on the site.
3. Participatory architecture in which user can add or edit value to the application according to their requirement.
4. A rich, interactive, user-friendly interface based on Ajax or similar frameworks.
5. Some social-networking aspects.
6. Enhanced graphical interfaces such as gradients and rounded corners (absent in the so-called Web 1.0 era).

Some of our Web 2.0 Development features include:

1. Cascading style sheet to allow users to control website content presentation and separation.
2. XHTML & HTML markups validated semantically.
3. Syndication, aggregation & notification of data in RSS feeds.
4. Web log publishing tools, wikis or forums, instant messengers etc.
5. Websites with Collaborative tagging, social classification, social indexing and social tagging can be developed.
6. XML, JavaScript based APIs can be used for website development.
7. Completely dynamic and interactive website development using Open source technologies and rich internet applications.

Features of Web 2.0 : Based on new ideas began to emerge around 2004 in Web - related technologies and Web site services , a new term "web 2.0" is coined by Tim O'Reilly. The following 7 are the key features of web 2.0

1. Folksonomy : Free Classification of Information
2. Rich User Experience
3. User as a Contributor
4. Long Tail
5. User Participation
6. Basic Trust
7. Dispersion

- ✓ **Folksonomy:** Traditional Web like Yahoo Directory and DMOZ uses a pre-defined classification of Information like category & sub category. On the other hand Web 2.0 without sticking to the existing framework of classification , allows user create free classification/ arrangement of information. This is also known as Social tagging. For example , the photo sharing site Flicker and Social Bookmarking of del.icio.us
- ✓ **Rich User Experience**: Traditional web are built with HTML and CSS、CGI and had been offered as a static page . On the other hand Web 2.0 uses Ajax （Asynchronous JavaScript + XML) presenting dynamic , rich user experience to users .For example, Google Provided Google Maps and Google Suggest

- ✓ **User As Contributor**: In tradition web, the information is often provided by the site owner and the user is always the receiver. The information model was One Way. On the other hand, Web 2.0 user also contributes to the content by means of Evaluation, Review & Commenting. The typical example is the Amazon.com – customer review section & Google's Page Rank mechanism
- ✓ **Long Tail:** The traditional web was like a retail business the product is sold directly to user and the revenue generated. But in web 2.0 the niche product is not sold directly but offered as a service on demand basis and income is generated as monthly fee and pay per consumption. The typical example is sales force CRM services and Google Apps
- ✓ **User Participation:** In traditional web the contents are solely provider by the web site owner /company, but in web 2.0 the users participate in content sourcing. This is also known as Crowd sourcing. The typical examples are Wikipedia & You Tube.
- ✓ **Basic Trust:** In traditional web, the contents are protected under Intellectual Property Rights but on the other hand, in web 2.0 the contents are made available to share, reuse, redistribute and edit. The typical examples Wikipedia & Creative Common
- ✓ **Dispersion:** In traditional web, the contents were delivered as direct site to home. But in web 2.0, the content delivery uses multiple channel include file sharing & permalinks.

How Web 2.0 Changed the Internet:

I personally feel that it is an understatement to say that Web 2.0 will change the face of the Internet. It is an emerging technology that has a number of important implications, and those who are prepared for such implications will prosper. Many have said that Web 2.0 will give users the same experiences that they first had when they used the Internet for the first time. However, many experts feel that Web 2.0 will be the result of small advances and tweaks that will gradually transform the net. While it took a few years for email to be adopted by the public, many feel that Web 2.0 will allow things to move much faster. However, the revolution that will become Web 2.0 is much more quiet than previous evolutions. To the casual Internet user, the changes are not very obvious. They log on, go to their favorite websites, or download games or movies. However, there are a large number of technical advances that are being made each day, and it will take some time for these changes to become visible. Many of the organizations responsible for these are a few small companies, as well as large software companies. In a nutshell, Web 2.0 will be the result of a major software upgrade that will occur on the Internet. For most of history, the Internet has been nothing more than a group of computers that were networked together via interlocking pages. The information would flow freely, and it would go from once source to another. One of the reasons why Web 1.0 was so powerful was because of its simplicity. Unlike many technological marvels, it was not inherently complex. A website was simply a group of pages that had text and images, and if you found a website that was similar in topic to your own, you could link to them, and they could link back.

People who visit their website could come to your website, and people who came to your site could go to theirs. While this interaction was very simple, it was revolutionary, and laid the foundation for what we have today. Now that I've given you an illustration of Web 1.0, let me give you a demonstration of web 2.0. Let's say you have a website in Web 2.0 that is related to a specific dog breed. You could subscribe to a dog care service that is related to Google News, and you could put in a request for the service to scan numerous new outlets across the web, and notify you of any information that is related to a specific dog breed. When you get up in the morning, you could find a link to a book that is written about the dog breed of your interest. You could then click on the link to go to the first article, and you could then use a tool such as Blogger to write a review of the books with links to Amazon.com, a place where the book could be purchased.

Lets say a few hours after you've posted the review on your blog, the blog is scanned by Technorati. As the service scans your site, it will notice the link you made to Amazon.com. For those not familiar with Technorati, it is similar to Google, except it deals specifically with blogs. It will scan blogs on a frequent basis to pull up new information. Technorati also has a feature that allows it to list popular books.

Advantages and Disadvantages of Web 2.0

While Web 2.0 has become a popular term in these days, few people have taken the time to weigh the pros and cons of these evolutionary change. While the advantages are heavily touted by those who are proponents of Web 2.0, there are also those who feel that this technology will do more harm than good. With Web 2.0, information can be pulled from a number of different places, and it can be personalized to meet the needs of a single user. Applications can be built on the existing applications that comprise the Web 2.0 interface.

It could be said that Web 2.0 will allow the mass population to communicate with each other and spread ideas rather than receiving their information from a single authority. Based on the descriptions above, it should be easy to see the advantages of this system. Information will flow freely, and people can express their ideas without fear of repression. Web 2.0 would make the Internet a true democratic system, a digital democracy. The population as a whole would become more informed. Instead of getting information from once source that could have an agenda, they can receive their information from multiple sources, and this will allow them to make better decisions about the world around them. A good example of this is the ability to read newspapers from various countries other than the one you reside in.

You can view events from more than one perspective, and this allows you to be a more well informed person. Another powerful advantage of Web 2.0 is communication. It has become obvious that the Internet is one of the greatest communication mediums in the world. In my personal opinion, the Internet surpasses even the telephone and printing press. The reason I say this is because the masses can communicate with each other without the oversight of governments or corporations. However, there are a number of disadvantages to Web 2.0 as well. Unfortunately, this information is rarely discussed in the media. Too many people push the benefits of Web 2.0 without taking the time to educate people about the problems. One of the key problems with Web 2.0 is dependence. I'm a good example of what happens when

you become heavily dependent on the Internet. If your connection should go down, how will you access the information that you come to depend on? Because many web services will be offered for free, they won't be secure, and they could easily be targeted by hackers.

While I'm a firm believer in the Internet, I don't accept the idea of a "paperless" office. Many people feel that Web 2.0 can facilitate this, but I feel it is a dangerous trend. No matter how advanced the Internet becomes, it is very important for some things to be kept in a hard copy form. If your hard drive crashes, and you didn't back up your information, you could lose months for even years of work. This is something that few of us can afford. Sharing is also an issue that will become controversial. What happens when users begin sharing information that is copyrighted? How will people be paid for the work they do? If videos, music, movies, and other information can be shared freely, how can a profit be generated? These are challenges that people will have to face once Web 2.0 is introduced.

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महात्मा गाँधी एवं डॉ. कलाम के मानस का सामाजिक–आर्थिक सूचनाओं के ग्रंथालयी सूचना प्रबंधन व संग्रहण में अनुप्रयोग

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सार (Abstract)

हमारे देश के रणनीतिकारों ने पश्चिमी अवधारणाओं को भारत में स्थापित करने के लाख प्रयत्न किये, परन्तु वे सब निष्फल रहे हैं, कारण अत्यंत स्पष्ट है कि पश्चिमी अवधारणायें अपने समाज के अनुकूल होने के कारण अपने–अपने देशों में सफल सिद्ध हुई, परन्तु सामाजिक परिवेश व मान्यतायें भिन्न और जटिल होने के कारण यह मॉडल इस देश के विकास में सहायक नहीं बल्कि बाधक बन गये हैं। यह उपयुक्त समय है जब हमें पश्चिमी प्रबन्धन तकनीकों व अवधारणाओं के कारागारों से मुक्ति पा लेना चाहिये और हमारे देश के महान मनीषियों के मानस व अनुभवों का उपयोग समाज की सामाजिक–आर्थिक उन्नति करना चाहिये। प्रस्तुत आलेख ग्रंथालय एवं सूचना विज्ञान के सामाजिक–आर्थिक विकास मे योगदान को तो परिलक्षित करना है, साथ ही महात्मा गांधी और डॉ. कलाम जैसे विश्व प्रसिद्ध मानस का ग्रंथालयीन सेवाओं में प्रयोग कैसे व क्यों किया जाये जिससे यह विषय समाज की मुख्य धारा से जुड़ कर देश में अपनी खोई हुई पहचान स्थापित कर सके। इस रूप में यह आलेख पुस्तकालय एवं सूचना विज्ञान के क्षेत्र में सर्वथा नवीन दृष्टिकोण को प्रस्तुत करता है।

शब्द कुंजी : सामाजिक–आर्थिक सूचनाएं, महात्मागांधी, डॉ. कलाम, ग्राम स्वराज्य, पी.यू.आर.ए. (Providing Urban Amenities in Rural Areas) समन्वित विकास, जन पुस्तकालय एवं सूचना केन्द्र, हाइब्रिड सूचना केन्द्र, लाइब्रेरी कंसोर्सिया, अलर्ट सेवायें, सी.ए.एस. सेवायें, एस.डी.आई. सेवायें, मल्टीमीडिया सूचनायें, पॉड कास्टिंग।

1. भूमिका :

भारत एक बहुरंगी, विविधताओं एवं मान्यताओं का देश है, इसमें सामाजिक और आर्थिक विकास हेतु पश्चिमी प्रावधानों व संरचनाओं को बिना सोचे स्वीकार करने के घातक परिणाम समाज में हो सकते हैं। यह सर्वमान्य सत्य है कि मानवीय विकास की अवधारणा केवल ज्ञान और सूचनाओं से ही संभव है। जिसकें वाहक ग्रंथालय व सूचना केन्द्र ही हो सकते हैं, अब प्रश्न यह हो सकता है कि कैसी सूचना? कितनी मात्रा में? और किसको? प्रदान की जानी चाहिये।

वर्तमान ग्रामीण सूचना केन्द्र मात्र अखबारों व कुछ पुस्तकों के भंडारगृह बनकर रह गये हैं, जिससे ग्रामीण विकास की जो सूचनाऐं जन–जन तक पहुँच जानी चाहिये वह रक्त वाहिनी अवरूद्ध हो गयी, ग्राम और पंचायतों को अज्ञानता के अंधेरों में धकेल दिया गया, इसके घातक परिणाम आज हमारे समाज में व्याप्त हैं, भयावह सामाजिक आर्थिक खाईयाँ समाज में बढ़ती जा रही है।

ग्रामीण और पंचायती सूचना केन्द्रों के सूचना संग्रहण व कार्यशैली मे आमूलचूल परिवर्तन से ही सामाजिक आर्थिक विकास की गंगा का मार्ग प्रशस्त किया जा सकता है।

2. अध्ययन के उद्देश्य –

ग्रंथालयीन सेवाओं मे भारतीयता का समावेश करना।

गांधी एवं डॉ. कलाम के कालातीत दर्शन का सूचना सेवाओं में उपयोग।

पुस्तकालय और सूचना विज्ञान को सामाजिक आर्थिक विकास की मुख्य धारा से जोड़ना।

जन पुस्तकालयों की वास्तविक भूमिका का निर्धारण करना।

स्थानीय विकास की अवधारणा में पुस्तकालयों की सक्रिय भागीदारी सुनिश्चित करना।

ग्रंथालय विज्ञान कर्मियों में एक नये दृष्टिकोण का विकास करना।

प्रत्येक व्यक्ति के सर्वगीण विकास में पुस्तकालय एवं सूचना केन्द्रों की सहभागिता तय करना।

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कुल आबादी 1.06 विलियन (मार्च 2004)।
कार्य करने में पूर्ण सक्षम (15–60 वर्ष) आबादी 610 मिलियन (2003 में अनुमानित)।
कृषि पर निर्भर आबादी – 65 प्रतिशत।
भारत में 6,00,000 गांवों में कुल 722.8 मिलियन व्यक्ति रहते है। (2001)
भारतीय शहरों में कुल 277.8 मिलियन व्यक्ति निवास करते है।
भारत में 40 प्रतिशत व्यक्ति मुख्य सड़क मार्गों से कटे हुये है। (सहारा टाइम्स मार्च 2004)।
133 देशों के करप्शन इंडेक्स में हम 83 वें स्थान पर है। (सर्वे–ट्रान्सपेरेन्सी इन्टरनेशनल)।
भारत में 593 जिलों (2003) में 192 मिलियन परिवार रहते हैं जिनके पास 179 मिलियन घर हैं।
40 प्रतिशत भारतीय परिवार एक कमरे के घर में रहते हैं।
भारत में 2.4 मिलियन पूजा स्थल हैं, जिनकी संख्या कुल स्कूलों, कॉलेजों व अस्पतालों की संख्याओं के जोड़ से भी ज्यादा है।
2001 की जनगणना के अनुसार 65.4 प्रतिशत साक्षरता दर हैं।
भारत में 32 प्रतिशत परिवार के पास टी.वी. सेट, एवं 27 प्रतिशत जनसंख्या रेडियो सुनती है।
45 प्रतिशत शहरी आबादी अखवार पढ़ती है।
भारत में पिछले दो दशकों में मद्यपान की खपत 106 प्रतिशत की दर से बढ़ी है।
260 मिलियन व्यक्ति गरीबी रेखा के नीचे जीवनयापन करते हैं। (अटल बिहारी वाजपेई के भाषण से साभार)।
दुनिया की एक चौथाई गरीब आबादी भारत में रहती हैं।
भारत की आर्थिक राजधानी मुंबई में दुनिया का सबसे बड़ा झोपड़पट्टी का इलाका धारावी में हैं, जो 432 एकड़ में फैला है, जबकि भारत की राजधानी दिल्ली में 15,0000 अनुमानित बच्चे फुटपाट में रहते हैं।
जहां 1950–51 में 27 विश्वविद्यालय थे, 2010–2011 के आँकड़ों के अनुसार 544 विश्वविद्यालय है, लगभग 31,324 महाविद्यालय हैं, जिनसे 20 लाख प्रतिवर्ष स्नातक छात्र/ छात्रायें उत्तीर्ण होते हैं।
भारत कें मेघावी छात्र ब्रिटेन में 17,000 एवं अमेरिका में 14,000 प्रतिवर्ष की दर से जाते हैं।
भारत में लगभग 550 मिलियन किसान रहते हैं, जिन पर सरकार वार्षिक बजट का 8 प्रतिशत खर्च करती हैं।
फल एवं सब्जियों के उत्पादन का विश्व में 14 प्रतिशत एवं विश्व में उनका निर्यात मात्र 1 प्रतिशत की हैं।

4. वर्तमान जनपुस्तकालय सेवायें –

जन पुस्तकालयों की वर्तमान सूचना सेवायें ज्ञानवर्धन व मनोरंजन तक ही सीमित हैं, इनका स्थानीय सामाजिक आर्थिक व व्यक्तिगत विकास पर आधारित होना अत्यंत आवश्यक है, जिसके द्वारा स्थानीय सामाजिक पर्यावरण का सर्वांगीण विकास सुनिश्चित किया जा सके।
जनपुस्तकालयों को एक नवीन विचार व परिकल्पनाओं के साथ समाज में स्थापित करने हेतु एक ढाँचाबद्ध संकल्पना आवश्यक है जिसका पोषण देश का संविधान व सरकारे सुनिश्चित करें।

अन्यथा असीमित संभावनाओं वाले इस क्षेत्र में यह विषय एक भंडारगृह की शिथिल भूमिका में ही रहेगा। भारत में लगभग 6,00,000 लाख गांवों में इन सूचना केन्द्रों की स्थापना व सक्रियता से देश में ज्ञान व विकास की वह अलख जगाई जा सकती है, जिसकी रोशनी से संपूर्ण विश्व को प्रकाशित किया जा सकता है।[1]

5. सवैधानिक आधार पर दी जाने वाली सूचनायेंः–

पंचायतों को कौन सी शक्तियाँ प्राप्त होगीं तथा वे किन उत्तरदायित्वों का निर्वहन करेंगी इसका उल्लेख संविधान के अनुच्छेद 243 (छ) द्वारा एक नई अनुसूची 11 वीं अनुसूची के माध्यम से

बताया गया है। इस सूची में पंचायतों के कार्य निर्धारण के लिए 28 विषयों को शामिल किया गया है, जो निम्न प्रकार है।

कृषि, जिसके अतंर्गत कृषि विस्तार भी है।
भूमि विकास और सुधार व संरक्षण।
लद्यु सिंचाई, जल प्रबंधन व जल आच्छादन विकास।
पशुपालन, दुग्ध उद्योग व कुक्कुट पालन।
मत्स्य पालन।
सामजिक वनोद्योग और फार्म वनोद्योग।
लद्यु वन उत्पाद।
लद्यु उद्योग जिसके अतंर्गत खाद्य प्रसंस्करण उद्योग भी है।
खादी, ग्रामीण और कुटीर उद्योग।
ग्रामीण आवासन।
पेयजल।
ईंधन और चारा।
सड़के, पुलिया, फल फेरी, जलमार्ग तथा संचार के अन्य साधन।
ग्रामीण विद्युतीकरण जिसके अतंर्गत विद्युत का वितरण भी है।
गैर पारम्पारिक उर्जा स्रोत्र।
गरीबी उपशमन कार्यक्रम।
शिक्षा जिसके अतंर्गत प्राथमिक व माध्यमिक विद्यालय भी है।
तकनीकी प्रशिक्षण और व्यावासयिक शिक्षा।
प्रौढ़ व औपचारिक शिक्षा।
पुस्तकालय।
सांस्कृतिक क्रियाकलाप।
बाजार व मेले।
स्वास्थय व स्वच्छता (अस्पताल, प्राथमिक स्वास्थ्य केन्द्र, औषधालय)
परिवार कल्याण।
स्त्री और बाल विकास।
दुर्बल वर्ग का विशेषकर अनुसूचित जातियों का कल्याण।
सार्वजनिक वितरण प्रणाली।
सामुदायिक अस्तयों, (संपत्ति) का अनुक्षरण। [2]

6. सूचना के चमत्कारिक प्रभाव

सूचना को हमने प्रबुद्ध व्यक्तियों से जोड़कर, उसके विस्तार को अत्यंत सीमित कर दिया है, जबकि सही समय पर सही सूचना एक मजदूर किसान व्यवसायी, वैज्ञानिक, प्रबंधक, अध्यापन, राजनीतिज, कर्मचारी, छात्र, गृहणी, सेवाकर्मी, आदि सभी के व्यक्तिगत सामाजिक व व्यवसायिक जीवन में चमत्कारिक प्रभाव उत्पन्न कर सकती है। जिससे देश का सामाजिक आर्थिक विकास अवश्यंभावी है।[7]

7. गांधी ही क्यों ?

इस देश में जिस प्रकार गंगा मात्र एक जलधारा न होकर भारतीय समाज व संस्कृति की परिचायक है, ठीक उसी प्रकार महात्मागांधी एक व्यक्ति न होकर भारत की आत्मा का प्रतिबिंब हैं। जिनके विचारों को विश्व की सभी संस्कृतियों व जातियों ने समान रूप से सम्मान प्रदान किया है। क्योंकि उन्होंने जो कहा या लिखा वह शब्द नहीं वरन उनके गहन मंथन, अनुभवों व संवेदनाओं का परिणाम है, जिसका अनुसरण उन्होंने जीवन पर्यन्त किया। भारतीय ग्राम्य जीवन पर उनका शोध अदुभुत व मनोहारी है। इस महान व्यक्तित्व के विचारों की जितनी अवहेलना हमारे देश में हुई है, शायद ही विश्व के किसी स्थान पर हुई हो, हिटलर जैसे क्रूर शासन भी महात्मा गांधी के विचारों का सम्मान करते थे, लेकिन हमारे देश में व्याप्त सामाजिक, आर्थिक, विषमताओं पर पूरा जीवन

बलिदान करने के पश्चात् भी, हमारी वर्तमान नीतियों में राष्ट्रपिता के नैतिक मूल्य, भावनायें व संवेदनायें नदारद हैं, जो गंभीर ंचितन का विषय है।

भारतीय ग्रामीण समाज में जागृति व स्वावलंबन हेतु जिस प्रकार की सूचनायें, ग्रंथालयों व सूचना केन्द्रों के माध्यम से प्रचारित व प्रसारित की जानी चाहिये एवं सूचना कर्मियों की सहभागिता स्थानीय विकास पर होनी चाहिये, उनमें गांधी दर्शन एक चमत्कारिक प्रभाव पैदा कर सकता है। क्योंकि उनके विचार प्रत्येक मानव को भययुक्त जीवन जीने का अवसर प्रदान करते है। यही विचार देश मे सामाजिक आर्थिक समरसता स्थापित करने हेतु शाश्वत सत्य की तरह है।

गांधी जी के विचार समय के साथ साथ और आभापूर्ण व नवीन लगते हैं, यही उनकी प्रमाणिकता है।

8. गांधी दर्शन से प्रेरित सूचनायें

कम्प्यूटरीकृत सूचनाएं राष्ट्रीय स्तर पर एकीकृत व प्रसारित की जा सकती हैं, जबकि पारंपरिक सूचना तकनीकें स्थानीय स्तर पर वितरण व उपयोग हेतु प्रयोग में लाई जा सकती हैं। गांधी दर्शन के अनुसार जन पुस्तकालयों में सूचना संग्रह का आधार निम्नांकित विंदुओं पर किया जाना चाहिये;

अहिंसक अर्थव्यवस्था
उद्योगवाद
पूंजी व काम
सहकारी खेती
मर्यादित समाज
विशाल समाज : पशु एवं पर्यावरण
आर्थिक असमानता
सामाजिक अव्यवस्था
राजनैतिक बुराईयां
साम्प्रदायिक एकता
आरोग्य
नशा उन्मूलन
स्त्रियों की सक्रिय भागीदारी
शिक्षा व संस्कृति
न्यायपूर्ण मजदूरी : काम का महत्व
प्रौढ़ शिक्षा
ग्राम सेवा
अस्पृश्यता निवारण
आदर्श ग्राम की कल्पना
ट्रस्टीशिप
विवेकपूर्ण मशीनीकरण
ग्राम स्वराज्य [4]

9. डॉ. कलाम ही क्यों ?

डॉ. कलाम के विचारों में एक 18 वर्षीय नौजवान का जोश, उत्साह, नयापन, व जुझारुपन नजर आता है, इस महान दर्शनिक वैज्ञानिक का सपना भारत को अग्रणी राष्ट्रों में शुमार करने का है। जिस देश में अवसर वैज्ञानिकता व समरसता भाव का विस्तार हो।

जब वैज्ञानिक किसी कथन को कहता है, तो पर्याप्त शोध व रूप रेखा निर्मित करता है, विज़न 2020 डॉ. कलाम का इस देश को अनुपम उपहार है, अब यह हम पर निर्भर करता है कि उनकी इस दृष्टि का प्रयोग हम अपने–अपने क्षेत्रों व सामाजिक आर्थिक–सूचना प्रणालियों के विकास में किस प्रकार कर सकते हैं ताकि प्रत्येक व्यक्ति को देश की वैज्ञानिक प्रगति का संवाहक व उपयोगकर्ता बनाया जा सके, विज्ञान और समाजशास्त्र का अदुभुत संगम डॉ. कलाम के विज़न

2020 में परिलक्षित होता है। इस मिसाइलमैन की दृष्टि चांद तारो के पार तो है ही साथ ही देश के अन्तिम व्यक्ति के दुखों का निवारण करने वाला कल्याणकारी विज्ञान भी इन्हें प्रेरित करता है।

10. डॉ. कलाम का विज़न – 2020 के मुख्य बिन्दुओं पर आधारित सूचनायें

कृषि एवं खाद्य प्रसंस्करण।
अधोसंरचना।
उर्जा।
जल अभियान।
ग्रामीण विकास कार्यक्रम।
पी यू आर ए।
एक सर्वांगीण कार्य प्रणाली का विकास।
स्थानीय विकास से राष्ट्र विकास की अवधारणा।
राष्ट्रीय खुशहाली सूचकांक का निर्धारण। (5)

11. डॉ. कलाम का सपना वर्ष 2020 तक एक ऐसे देश का निर्माण –

जिसमे, ग्रामीण व शहरी क्षेत्रों मे मामूली अंतर हो।
ऐसा देश जिसमें पर्याप्त उर्जा व उसका समान वितरण संभव हो सके।
जल की उत्तम व्यवस्था।
कृषि, उद्योग एवं सेवा उद्योगों मे समरसता स्थापित की जाये।
शिक्षा की गुणवत्ता सुनिश्चित की जाये ताकि देश में शैक्षणिक असमानता को समाप्त किया जा सके, शिक्षा मौलिक अधिकार बने।
एक ऐसा देश जो मेघावी छात्रों, वैज्ञानिकों व पूंजी निवेशकों को विश्व में सर्वाधिक आकृषित करता है।
स्वास्थ्य सुविधाओं पर राष्ट्रीय नीति तैयार की जाये।
सरकारें जिम्मेदार, पारदर्शी व भ्रष्टाचार मुक्त हो।
गरीबी अशिक्षा, अपराध, आंतकवाद, जैसे सामाजिक शोषण मुक्त समाज का निर्माण किया जाये।
एक नागरिक के रहने हेतु यह देश सर्वश्रेष्ठ वातावरण निर्मित करे, जिसमें संवैधानिक संस्थाओं जैसे संसद, विधानसभाओं आदि के नेतृत्व पर हमें गर्व हो। (8)

12. ग्रंथालयीन सेवाओं में अनुप्रयोग –

महात्मा गांधी और डॉ. कलाम के उपरोक्त विचारों पर आधारित लिखित, दृश्य, श्रृव्य व मल्टीमीडिया सूचनाओं का संग्रह राष्ट्रीय व क्षेत्रीय स्तर पर एक शक्ति संपन्न संस्था के गठन द्वारा किया जाना चाहिये, जिसमें स्थानीय सुधार संबंधी सभी चिन्हित बिंदुओं का उल्लेख सरल व सरुचिपूर्ण क्षेत्रीय भाषा में किया जाये, जमीनी स्तर पर इस सूचना केन्द्रों की महत्ता स्थापित करने हेतु ग्रंथपालो के विशेष प्रशिक्षण की व्यवस्था भी संस्थागत रूप से की जावें, जिससे किसी क्षेत्र विशेष की परिस्थितियों के अनुकूल सूचना के संग्रहण व उसके विस्तार हेतु प्रबंधन का ज्ञान ग्रंथपालों को दिया जा सके। इस हेतु पर्याप्त धन व मानवीय संसाधन भी उन्हें प्रदान किये जाने चाहिये।

ग्रंथपालो को पारंपरिक वाचनालयों से निकालकर कैसे तकनीक व व्यक्तिगत परिश्रम से क्षेत्र के प्रत्येक व्यक्ति के जीवन के सरोकारों से जोड़ा जाये, इस हेतु भी एक संस्थागत प्रयास किया जाना चाहिये। नेटवर्किंग के माध्यम से भी इन सूचना केन्द्रों को प्रभावशाली बनाया जा सकता है।

जैसे जैसे यह केन्द्र स्थानीय सामाजिक आर्थिक विकास के वाहक बनेंगे, लोगों में इनके प्रति सम्मान व इनकी महत्ता का पुर्नः जागरण प्रांरभ होगा, तब यह वास्तविक अर्थों में समाज के हृदय स्थल व आस्था के मंदिर बन सकेंगे।

13. हाइब्रिड जन पुस्तकालय एवं सूचना केन्द्र

जन ग्रंथालयों में पारंपरिक सूचना सेवाओं के साथ ही आधुनिक कम्प्यूटरीकृत सूचना तकनीकों का समावेश कर एक अद्‌भुत प्रभाव उत्पन्न किया जा सकता है। तकनीकों का प्रयोग जहाँ विश्व व्यापी सूचनाओं के संग्रहण में किया जाना चाहिये, वहीं पारंपरिक सूचना प्रदाय सेवायें अंतिम व्यक्ति तक सूचनाओं के विस्तार में प्रयोग में लाई जा सकती हैं। यह हाईब्रिड जन पुस्तकालय[3] समाज के सामाजिक आर्थिक आधार को सुदृढ़ करने में उपयोगी साबित हो सकती है।

पुस्तकालय एवं सूचना विज्ञान की नवीन अवधारणाओं व तकनीकों का प्रयोग–

सी.ए.एस. (CAS) सेवायें– इस प्रकार की त्वरित जागरूक करने वाली सूचनायें जिनका संबंध आर्थिक, सामाजिक विकास से हो इस सेवा के माध्यम से अंतिम व्यक्ति तक पहुंचाई जा सकती हैं। इसी प्रकार कृशि, स्वास्थ्य, पर्यावरण, सरकारी नीतियां एवं व्यावसायिक सूचनायें जिनका मानव जीवन पर गहरा असर पड़ता है अलर्ट सेवाओं के माध्यम से कारगर तरीके से पहुंचाई जा सकती हैं।[6]

एस.डी.आई. (SDI) सेवायें– इस प्रकार की चयनित सूचना सेवा का प्रयोग जन पुस्तकालयों में प्रत्येक व्यक्ति का व्यक्तिगत सामाजिक आर्थिक अध्ययन करने के उपरान्त उसके सारोकार की सूचनायें उस तक पहुंचाने में किया जा सकता है।[6]

लाईब्रेरी कंसोर्सिया– पुस्तकालय विज्ञान के इस आधुनिक तकनीकी विचार का प्रयोग भी सम्पूर्ण राश्ट्र, प्रान्त अथवा स्थानीय स्तर पर जन पुस्तकालयों की सूचनाओं का डिजीटाईजे ान कर आपसी सहभागिता के माध्यम से एक सूचना केन्द्र से दूसरे सूचना केन्द्र तक पहुंचाया जा सकता है, इससे संसाधन, परिश्रम व धन की बचत कर हम उत्तम गुणवत्ता की सूचनायें लाभार्थी तक पहुंचा सकते हैं।[3]

मल्टीमीडिया सूचनायें– सूचनाओं के अनेक माध्यम हो सकते हैं जैसे–दृ य, श्रृव्य, लिखित, ऑनलाइन सूचनायें, ग्राफिक्स, स्लाइड प्रजेंटे ान आदि सभी प्रकार की सूचनाओं के सम्मिलन से मल्टीमीडिया सूचनायें विकसित की जा सकती हैं जिनको प्रभाव ाली तरीके से उन व्यक्तिओं तक पहुंचाया जा सकता है जिन्हें अक्षर ज्ञान तक न हो, वास्तव में तकनीक का वास्तविक औचित्य भी तभी माना जा सकता है जब वह अंतिम व्यक्ति के जीवन में बदलाव लाने में सक्षम हो।[3]

पॉडकास्टिंग एवं मोबाइल सेवायें–पॉडकास्टिंग वह तकनीक है जिसके माध्यम से उपयोगकर्ता से सीधा संवाद स्थापित करते हुए उसे वांछित सूचनायें उसके कार्यस्थल पर ही प्रदान की जा सकती हैं। इस हेतु सूचना संवाद का माध्यम मोबाईल व कम्प्यूटर दोनों को ही बनाया जा सकता है। मोबाईल क्रांति ने इस दि ाा में सूचनाओं सेवाओं के विस्तार हेतु नवीन अवसरों के द्वार प्र ास्त कर दिये हैं।[9]

14. चुनौतियाँ

1. एक राष्ट्रीय व प्रादेशिक संरचना का अभाव।
2. पुस्तकालय विज्ञान में पारंपरिक स्थापित अवधारणायें।
3. पश्चिमी उपभोक्तावादी समाज के पोषक विचारों के अनुरूप न होना।
4. सूचना की चमत्कारिक महत्ता से अंजान समाज।
5. आर्थिक और राजनीतिक बाधायें।
6. इन विचारों के अनुरूप सक्रिय व रणनीतिकार ग्रंथपालों को तैयार करने की चुनौती।
7. जनता के विकास व जागरुक होने से नकारात्मक प्रभुत्व वाली शक्तियों का विरोध।

15. उपसंहार

महात्मा गांधी और डॉ. कलाम के विचारों व संकल्पों को ग्रंथालयीन सूचना सेवाओं के माध्यम से जन जन तक पहुँचाने से ही हमारा विषय सही मायनों में देश के सामाजिक आर्थिक विकास में अपनी सक्रिय भागीदारी निभा सकता है।

प्रस्तुत आलेख के माध्यम से सूचना संग्रहण व उसके विस्तार के इस नवीन दृष्टिकोंण को पुस्तकालय विज्ञान मे स्थापित करने का प्रयास किया गया है।

भारत के लोगों में इस प्रकार की जन चेतना की आवश्यकता हैं, जिसमें अतिंम व्यक्ति को भी सामाजिक आर्थिक विकास का भगीदार बनाया जा सके, उसमें इन दोनों महान विचारकों की अनदेखी नहीं की जा सकती है। उसके गंभीर परिणाम हो सकते है।

महात्मा गांधी के ग्राम स्वराज व डॉ. कलाम के नई सदी के विज्ञान का सामाजिक आर्थिक क्षेत्र में प्रयोग करके ही हम वर्तमान असमानता व अंधकार को चुनौती दे सकते हैं।

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One click knowledge through E-Capsule

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Abstract:

E-resources are today's most important part of sharing knowledge. It includes on-line reading of database related to news feed, science & technology, history and literature. E-resources are not only making space between experienced intellectuals but also with school going teenagers as they find it much more exciting and interesting. E-based learning is very fast, convenient as well as environmental friendly for not using papers manufactured by destroying the forest. The data for this study was collected and compiled from various resources and especially from the digital library. This write up will focus on preservation and challenges related to management and development.

Key words: Digital preservation, digitization, Dspace, Digital obsolescence and On-line reading.

Introduction

Alternative knowledge sources such as audiocassette tapes, video tapes, computer disks, CD-ROMS and DVD needs special equipment to display items and give challenge to preserve the information contained on sometimes-fragile storage media.

In 1993, World Wide Web opened u online publishing as an easily available, ubiquitous, and relatively inexpensive means of creating and distributing information, national and other deposit. The online data is huge and items are complex as website contains a number of different file formats, which mandate its preservation.

1.1 Digitization

Digitization is the process of representing an object, an image, or a signal by a discrete set of its points or samples.

Example:- Maps, Manuscripts, moving images and sound.

1.2 Importance of Active preservation

Margaret Hedstro points out "digital preservation raises challenges of a fundamentally different nature which are added to the problems of preserving traditional format materials.

According to a report by the US library of congress, 44% of the sites available on the internet in 1998 had vanished one year later, these includes website for the E-Mail services and social network etc.

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1.3 Strategies

A four point-strategy developed by online computer library centre (OCLC), in 2006, for the long-term preservation of digital objects that consist of:

Assessing the risk for the loss content posed by technology variables such as commonly used proprietary file formats and software application.

Evaluating the digital content objects to determine what type and degree of format preservation actions should be applied.

Determining the appropriate metadata needed for each object type and how it is associated with he objects.

Providing access to the content

1.4 Refreshing

Refreshing is the transfer of data between two type of the same storage medium so there are no bitrates changes or alteration of data. This strategy may need to be combined with migration when the software or hardware required to read the data is no longer available or is unable to understand the format of the data. Refreshing will likely always is necessary due to the deterioration of physical media.

1.5 Migration

Migration is the transferring of data to newer system environments. This may include conversion of resources from one format to another (e.g., conversion of Microsoft word to PDF or open document), from one operating system another (e.g., solaris to Linux). So the resource remains fully accessible and functional.

1.6 Replication

Creating duplicate copies of data on one or more system is called replication. Data that exists as a single copy in only one location is highly vulnerable to software or hardware failure, intentional or accidental alteration, and environmental catastrophes like fire, flooding, etc. Digital data is more likely to survive if it is replicated in several locations. Replicated data may introduce difficulties in refreshing, versioning, and access control since the data is located in multiple places.

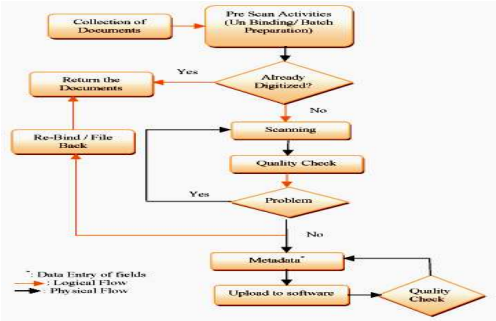
1.7 Emulation

Emulation is the replicating of functionally of an obsolete system . Emulators may be built for applications, operating systems, or hardware platforms. Emulation has been a popular strategy for retaining the functionality of old video game system.

1.8 The challenges

The challenges of integrating electronic resource are many. Several author suggested comprehensive approaches to library collection development in an electronic age.

The first challenge digital preservation faces is that the media on which digital content Stand are more vulnerable to deterioration and catastrophic loss as the recording media for digital data deteriorate at much more rappid pace. This charestic of digital form leaves a very short time frame for preservation decision and actions .



1.9 Digital Obsolescence

This challenge is exacerbated by the lack of established standards, protocols, and proven methods for preserving digital information, as there is no guarantee of safety and preservation of any digital media, including Tapes, CDs and Pen drive etc. Hedstrom further explained that all digital library researches have been focused on "architectures and systems for information organization and retrieval, presentation and visualization, and administration of intellectual property rights". Crowe and Sanders (1992) see these technology-driven changes as actually increasing the need for cooperation and communication among institutions. In order to continue to provide effective physical access to documents, libraries must increase cooperation to overcome potential funding and management problems, such as communication failures, and lack of standard access and authority for resource sharing.

while the rapid advance of technology insecure digital contents as a whole though hacking, the lack of digitizing standards affects the issue in widely.

1.10 Cost

Digitization is high cost required process for its creation, production, and dissemination and introduced new and uncertain economic realities. In digital customers are required to pay fees for access to digital services and collections, thus, forming major obstacle in digitization.

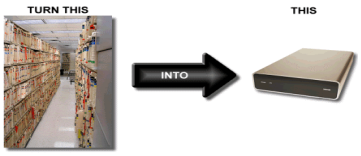
1.11 Organizational

Digital library require 24 X 7 power supply, long term organization and institutional commitments. Management of the technical infrastructure for "digital library" services will be a significant obstacle for most libraries fluctuations in budget and continuous increase in the capital for development and maintenance. As compared to

print collection, local administration of the digital collections is harder and more expensive.

1.12 Intellectual Property Right

An intellectual property is an intangible asset and many laws are implemented for its protection thus creating big barrier for preserving the digital documents and are involved with complex method for resolving the legal and practical questions of migration intellectual property, that includes the creators and owners of intellectual property, managers of digital archives, and actual and potential users of intellectual property.



1.13 Lack of Expertise

Digital library should be handled by the professionals who technically sound to manage it as well as to fulfill the requirement for development of an infrastructure for the networked resources discovery and retrieval of highly distributed, autonomously created, and diverse electronic information.

1.14 Conclusion

As digital library is less expensive more reliable, easy to manipulate, flexible compatible with other digital systems but it also provide sampling error, require greater bandwidth than analogue to transmit the same information and need communication system to be synchronized.

A strategy with defined selection priorities for digitization is critical and should be informed by a convergence in the consideration for both preservation and access. The focus should be based on traditional preservation decisions such as the value of materials; the condition of materials; use of materials ensuring a high level of success. For the library of Congress, items of national interest are prime candidates and digitizing this object improves access while reducing the wear and tear on the originals. Required staff expertise and additional resources are often the greatest costs in digitization projects. Not only are large budget allocations needed to fund research and intellectual selection, but also time must be spent for feasibility assessments, training, and methodical prioritization of items or collections to be digitized. These requirements pull staff away from their regular workloads. Cataloging the new material adds additional base costs to the budget (Ingram, 2000, p. 19). Digital conversion projects require added levels of work not needed in traditional reformatting projects (Gertz, 2000, p. 100). Many institutions lack expertise and preparation must be well-planned (Ingram, p. 18). Digital conversion is not a yet a form of preservation; which relies on long-term, stable media, which cannot be expected with today's technology. The only accepted long-term preservation media are durable acid-free paper or preservation microfilm (Gertz, 2000, p. 97). Access to successful digital surrogates often encourages people to wish to consult the original. This impacts staff in other ways with more calls, letters, and requests for publication

or reproduction of the materials, and added reference service is necessary (de Stefano, 2000, p. 13). High-quality surrogates must be created in order to satisfy the users' needs, or they will need to go back and consult the original (de Stefano, p. 21-22).
Financial costs are extremely high and cultural institutions usually operate with either flat or marginally increasing budgets. Operational environments must have fundraising and accountability. With such great costs of staff time and funding, the "risk of loss", is very high (Conway, 2000). Another disadvantage of creating digital surrogates is that users are completely reliant on computers and stable Internet connections to view and retrieve the digital information (Smith, 1999, p. 2). Depending on users' hardware and software capabilities access may be frustrating because of the large variety of computer models, platforms, software, and hardware around the world. Ease of access to a digital collection leads to high expectations of end-users. There is a tendency to believe that everything is available online, that every piece of information is true and accurate, and that everything available online is free. Rarely do users understand or appreciate the scope of the collection and its relationship to other parts of the collection. (Ingram, 2000, p. 19). In India, libraries are facing many problems initially in digital preservation as shortage of fund provided them, intellectual right issues, less interest of parent institutes and staff.

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Digital Literacy among P.G Students in University Libraries with Special Reference to Vikram University, Ujjain (M.P.)

Raj Boria*

Abstract

University libraries are investing very much amount on digital resources and services for the benefit of users in this changing environment. Nevertheless, the lack of digital literacy in users is a great challenge for libraries. Literate the user is the only solution, so university libraries must literate their users to make better use of available digital resources and services. Present study shows the digital literacy among the P.G. students of Vikram University Ujjain. In addition, efforts made by the university library to literate the users. Moreover, presents the suggestions to overcome barriers in digital literacy.

Introduction

Modern university libraries are providing number of digital resources and digital technology based services to their users, but the lack of awareness in users, there is an enormous wastage of digital technology based resources and services. This is a great challenge for university libraries. Literate the user is the proper solution. University libraries must literate their users to make better use of available information resources and services. So it is very essential to develop digital technology based skills in users. Instructing users on library use and promoting information literacy have become a major responsibility of university library and their staff due to challenges in teaching and learning process in the higher education and more so with the advent of digital libraries. **Digital literacy** is the ability to locate, organize, understand, evaluate, and analyze information using digital technology. It involves a working knowledge of current high technology, and an understanding of how it can be used. Further, digital literacy involves a consciousness of the technological forces that affect culture and human behavior. Digitally literate people can communicate and work more efficiently, especially with those who possess the same knowledge and skills. **Digital literacy is the set of attitudes, understanding and skills to handle and communicate information and knowledge effectively, in a variety of media and formats (David Bawden)**

Objectives

To study the awareness about digital resources among the PG students
To find out the awareness about UGC-Infonet programme in University.
To study the efforts made by university library to promote digital literacy among the PG students.
Suggestion for improvements

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Methodology

Questionnaire and Interview techniques were used for primary data collection. The sample of 100 P.G. students of different subject groups was taken for the study. 100 Questionnaire were distributed, 25 questionnaire each subject group among P.G. students. The subjects divided into four groups via' science, technology, arts, social sciences according to DDC scheme, out of which 80 questionnaires returned duly filled in. some data were collected from librarian by interview method.

Maharaja Jiwajirao Library (Central Library)Vikram University, Ujjain (M.P.) Dwelling on new digital initiatives the MJ Library cater to the academic interests and research needs of the student and faculty members. Build up more than 4193.04Sq. M the library is well stocked with over 1, 60,856 print books and 4800 back sets of periodicals. 26 news papers and more than 80 electronic media like CDs/DVDs. The library house industry relevant reports, standards, annual reports, magazines, newsletters, etc. An automated set-up with user-friendly portal providing a single point access to e-resources is underway. More than 1400 users are taking advantage of this library annually.

The Library is managed professionally and apart from Lending and Reference services; offer good number of e-info services. The Library and E-Resource Centre plays a proactive role to ensure that the information resources are acquired and organized to meet the present and future needs of its users. MJ Library subscribes to a large number of electronic databases. A OFC LAN is under way which will made available all the databases through campus network in University Campus. Besides a good number of databases are also accessible through UGC Infonet Digital Library consortium.

INDCAT : Right now MJR Library providing OPACLINE called INDCAT under which 123 university libraries holdings are available.

JCCC@UGC : Under JCCC@Infonet about 200000 articles from different fields are subscribed to e-resources. These e-resources covers almost all subject disciplines including arts, humanities, social sciences, physical sciences, chemical Sciences, life sciences, computer sciences, mathematics and statistics, etc. The programme is wholly funded by the UGC and executed by the INFLIBNET (Information and Library Network) Centre, Ahmedabad.

J-Gate :The MJR Library is providing J-Gate services to its clients. J-Gate is an electronic gateway to global e-journal literature. Launched in 2001 by Informatics India Limited, J-Gate provides seamless access to millions of journal articles available online offered by 7950 Publishers. It presently has a massive database of journal literature, indexed from 24148 e-journals with links to full text at publisher sites. J-Gate also plans to support online subscription to journals, electronic document delivery, archiving and other related services.

ScienceDirect: Providing Science Direct (on request) consist of 10 subjects (1. Biochemistry, Genetics & Mol. Biology, 2.Agriculture & Biological Science, 3.Chemistry 4.Computer Science, 5.Economics, 6.Immunology & Microbiology, 7.Mathematics, 8.Physics & Astronomy, 9.Social Sciences, 10.Psychology) collection (1000+journals titles) from INFLIBNET Centre, Ahmedabad.

Digital Library Consortium & IBID

MJ Library is a member of DLC under which it is getting the number of e-publishers The library also providing IBID (on trial)

E-Books & Online Catalogues

The Library also provides a number of E-Books in Commerce, Management, Science, Technology, Computer Science, English Literature, Social Science and other subjects (on request). MJR library also have the facility of online catalogues

Best of the Best Websites in Net

Best of the Best sites in different subjects available in Internet, All the sites are ranked by the net users. Just click the underline hyper links, your computer will automatically open the referred sites. Mjr library provide the hyperlinks of best of the best sites in different subjects.

List of E Databases

Electronic databases come very handy for searching vast data within a shortest possible time. There are good number of such databases are available on the internet today, which can be accessed **free of cost**. Mjr library provide the links to get information from different databases .i.e. **Bibliographic Databases, Full text Databases, Statistical Databases. MJR Library also provides E-Papers & News online to its users.**

Analysis and findings:

Do you know about digital library?

Subject	Yes	Percentage	No	Percentage
Sciences	10	50	10	50
Technology	10	50	10	50
Arts	4	20	16	80
Social Sc.	4	20	16	80
Total	28	35	52	65

Digital library the 21 century has started drastic changes in scoring the information/information objects digitally in different locations a making it available to the users. Nowadays this is the new source of information, which is widely available and easily accessible. As such effort was made to find out whether the user community the academic libraries are aware of this kind of information resource. From the study it is observed that 35 % of the user population is actively made aware of the concept of digital library. It is true that 65 % of the users are not aware of the terminologies and the techniques. What they need is the information to meet their specific needs.

Are you familiar with digital-resources?

Subject	Yes	Percentage	No	Percentage
Sciences	12	60	8	40
Technology	14	70	6	30
Arts	4	20	16	80
Social Sc.	6	30	14	70
Total	36	45	44	55

Digital Resources are the resources, which are very much comfortable and are easy to use from any location. The publication industry around the world has taken the advantage of ICT and is making the scientific information easily available. Infect the UGC has started the UGC-Info net programme in 2001-2002 and is making available at large number of E-Resources to the universities in India and the vikram university library has made the beginning in this direction. As such it is felt necessary to find out whether the users are aware of this resource. It is found that 45 % user familiar with digital resources & nearly 55 % of the users unaware of the digital resources.

Do you use online catalogues?

Subject	Yes	Percentage	No	Percentage
Sciences	9	45	11	55
Technology	9	45	11	55
Arts	4	20	16	80
Social Sc.	8	40	12	60
Total	28	35	52	65

The union catalogues of different groups of libraries are the library catalogue of major libraries are digitally available as online-catalogues for the use of the academic community across the globe. As a result the members of the library can access these online catalogues and can know the availability of required documents keeping in this view a question has been asked about the utility of awareness of online catalogues. Nearly 65% of the users are not aware of the online catalogues.

Do you know about e-books?

Subject	Yes	%	No	%
Sciences	8	40	12	60
Technology	7	35	13	65
Arts	4	20	16	80
Social Sc.	6	30	14	70
Total	25	31.2	55	68.7

Is there any facility to access e-books

Subject	Yes	%	No	%
Sciences	3	15	17	85
Technology	5	25	15	75
Arts	4	20	16	80
Social Sc.	6	30	14	70
Total	18	22.5	62	77.5

Present day is witnessing electronic revolution. The book has moved a long way from its traditional print format to E-Format availing a wider group of users accessing the same title from different corners of the world. E-Books have just made a beginning in the academic libraries. By university, libraries are in the process of purchasing E-Books for better use. As such, it is felt appropriate to find out whether the users are aware as such resources. From the study, it is observed that nearly 69% of the user populations studied is unaware of the E-Books. Infect the same user group are not aware of the availability of such E-Books in the university library. From the study, it is also observed that the same user populations are not accessing E-Books from the library.

Do you know about e-journals?

Subject	Yes	%	No	%
Sciences	9	45	11	55
Technology	11	55	9	45
Arts	1	5	19	95
Social Sc.	6	30	14	70
Total	27	33.7	53	66.5

Do you use e-journals?

Subject	Yes	%	No	%
Sciences	8	40	12	60
Technology	9	45	11	55
Arts	1	5	19	95
Social Sc.	4	20	16	80
Total	22	27.5	61	72.5

Is library provide any facility to access e-journals

Subject	Yes	%	No	%
Sciences	2	10	18	90
Technology	4	20	16	80
Arts	0	0	20	100
Social Sc.	2	10	18	75
Total	8	10	72	90

Are you aware with the UGC-INFONET Programme

Subject	Yes	%	No	%
Sciences	4	20	16	80
Technology	6	30	14	70
Arts	1	5	19	95
Social Sc.	2	10	18	90

As stated in the previous paragraph the electronic revolution has influenced the publishing industry to a very large extend which has resulted in the changes in the format. of the publications. E-Journals are the creation of the late 20th century and are the main source of information for researchers in 21st century. The E-Journals are having a variety of advantages and when compare to print journals. The researchers in the academic institutions are supposed to be aware of this resource since there is incomplete without accessing the latest information. As such an effort for made to find out whether the acadmicia of the university are aware of E-Journals. Only 27 % of the students are aware of the E-Journals and are using for there academic pursuits. It is appropriate to mention here the efforts made in the UGC in providing access to 4300 E-Journals to all the universities under the UGC infonet programme. From the study it is noticed that nearly 22% of the students community is using the E-Journals for accessing full text research articles or for bibliographical details. Nearly 13% of the users have expressed about the awareness /access to E-Journals of the UGC infonet programme through the university library. It is a good indication that in a spare of two years the beginning has been made among the users of the university library in accessing E-Journals. Very few users are aware of the UGC infonet and its E-Resources.

Do you use CD-ROM DATABASES?

Subject	Yes	Percentage	No	Percentage
Sciences	3	15	17	85
Technology	6	30	14	70
Arts	3	15	17	85
Social sciences	7	35	13	65
Total	19	23.75	61	76.25

CD-ROM Databases are the creation of mid 20th century and are being used even today. CD-ROM Databases provide a wide range of data of relevance to the

researchers. Nearly 24 % of the users studied are searching the CD-ROM Databases. Where as a large per potion of the users are unaware such databases.

Conclusion and suggestions

In today's environment, every information is available in different format, but it is bad experience that students are not digital literate. The status of digital literacy in students is very low. Around 72 % of the users not aware about online catalogues, E-Books, E-Resources, E-Journals, CD-ROM Databases, UGC-Info net etc and their effective use. It is very great challenge for university. University library should give special attention in this regard.

It is good sign that university library providing computer with internet facility to researchers and faculty only this facility should be provide to PG students also, so that student can access internet and library both at one place.

It is observed that there are no any efforts made by university library regarding digital literacy for the users. University library should organize such training progaramme time to time.

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Digital Preservation: A Potential Impediment to Libraries

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ABSTRACT:

Information is facts, data and knowledge, which evolve from different sources in the world. Knowledge becomes information when it is communicated through different sources available to the society. The ICT which also produce, store and distribute the information has made the libraries to go digital. The information so collected or available in the digital format has to be preserved for the use of future generations. The world is becoming virtual world and ICT savvy society the problem to preserve the digital information is becoming difficult day by day. In this article the emphasis has been given on the present state of digital preservation. The article also deals with different problems of the digital preservation and suggests further research in storage media, migration, conversion and overall management of the present preservation strategies.

1. Purpose of Preservation: An Introduction

The purpose of preservation is to ensure protection of information of enduring value for access by present and future generations. The information available in the world has been written first on clay tablets or carved into marbles, stones etc. and its preservation in the present time is simplified. The paper manufactured and stored in proper condition can be preserved for not less than 90 to 100 years.

In the present time of ICT era lot of information being produced is digital and digital formats are very notoriously fragile and risky. Due to rapid change and development in the technological field of the ICT the media on which the information is stored becomes unreadable, or the hardware and software needed to read the information become obsolete. The rapid change in the hardware and software also create lot of problems to the information seekers as they have to have the latest version of the computers having all features to read the preserved information and also to update their knowledge of computer literacy so as to gather the information from the latest digital devise. The changes of the ICT technologies are so fast that no individual or the organization is capable to update their library or the information resources centre according to the change in the technologies. Hence the information so preserved can not be made available to the information seeker at the right time, at the low cost to the readers.

In recent times, many important libraries have established various preservation programmes for traditional materials like books, journals etc. and allocated some resources for preservation. They have started some preservative and remedial methods to avoid deterioration and preserve the same for the use of future generations.

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For preserving the traditional materials in the library lot of methods have been adopted and they become very much successful and a large number of archival materials were preserved according to different methods and they are used by a large number of people for their research etc.

2. Digital Preservation

The digital Library, digital information, digital preservation any thing which sound digitization has become a common topic amongst the library & information people. In India in almost all the seminars or work shops the people in the field of Library & Information Science can be noticed advocating the use of digital information, digital libraries etc. without taking into consideration the basic facts that until unless proper training and provision of ICT infrastructures to be provided to the Libraries, advocating for the use of ICT is of no use.

The Library Science people who generally comes from big cities and Universities who knows Internet browsing and with little computer knowledge advocates the use of ICT for information dissemination without going into the facts that more than 80% of the Indian Libraries do not have basic infrastructures like computers, internet connectivity, computer literate Librarians, lack of support from the authorities who matters in the organization and most importantly the Electric power.

The authorities in the field of Library Science can do justice with their scholarly ideas in the Seminar or Work shop if they really connect to the reality of the present day Libraries in India and present their ideas accordingly.

First digital libraries have gone through a transition from research and experimental projects to an important part of the infrastructure for research and teaching. As scholarly communications have shifted rapidly from print-based journals to either hybrids of print and electronic journals or to exclusive publication in digital form, the need to preserve a comprehensive record of research and scholarly achievement has not diminished digital preservation is the active management of digital information over time to ensure its accessibility. The preservation of digital content for long periods of time, across different generations of hardware and software technologies and standards is essential in creating the acceptability & effectiveness of digital libraries. Preservation of digital information is widely considered to require more constant and ongoing attention than preservation of other media. This constant input of effort, time and money to handle rapid technological and organizational advance is considered a major stumbling block for preserving digital information.

"Digital preservation refers to the series of managed activities necessary to ensure continue access to digital materials for as long as necessary". (Jones & Beagrie). We know that we still able to read our written heritage from several thousand years ago, the digital information created merely a decade ago is in serious danger of being lost, creating a **digital *dark age***. The loss of commercial/ business information by some of the American companies which were destroyed by the bombing of Twin Tower Trade Centre is the example of the complete loss of digital information within hours. Due to this a number of companies/ firms have loss their vital commercial/

business data information and they have vanished. Digital preservation raises challenges of a fundamentally different nature which are added to the problems of preserving traditional format materials. By digital preservation, mean the planning, resource allocation, and application of preservation methods and technologies necessary to ensure that digital information of continuing value remains accessible and usable.

3 Challenges of Digital Preservation

The digital materials are especially vulnerable to loss and destructions because they are stored on fragile magnetic and optical media which deteriorate rapidly and that can fail suddenly from exposures to heat, humidity, airborne containments or faulty reading and writing devises. (" Hedstorm and Montgomery, 1998) . The champions in the field of Library Science always claim that with different types of technological care etc the information stored will not be deteriorated and can be preserved easily. But however the media on which the information are stored may or may not fail, what will be the guarantee that when the technology will change rapidly so that even if the media is retained in good condition, it may not be possible to access the information it contains. Devices, processes and software for recording and storing information are being replaced with new products and methods on a regular three to five year cycle, driven primarily by market forces. Records created in digital form in the first instance and those converted retrospectively from paper or microfilms to digital form are equally vulnerable to technological obsolescence.

A very recent and appropriate example of this is that the 8" floppy disk was in use for storing a large amount of information and now the provision of reading from the 8" floppy disk is not available in the latest computers. Hence the information contains in the floppy disk by any organization in the last 5 to 10 years can not be used until unless a proper action is taken to get the information contained in the floppy disk transferred to some new devise which can now be readable in recent computers. Another example is that information preserved in word format in the Microsoft Word Document 98 can not be accessed / read in the recent Microsoft Word Document of 09 un-till unless the computer have the provision to convert the 98 Word Document into Word Document 09.

More insidious and challenging than media deterioration is the problem of obsolescence in retrieval and playback technologies. Innovation in the computer hardware, storage and software industries continues at a rapid pace. The digital preservation raises challenges of a fundamentally different nature which are added to the problems of preserving traditional format materials. Digital preservation deals with material that begins its life in digital form as well as material that is converted from traditional to digital formats. More serious and challenging than media deterioration is the problem of obsolescence in retrieval and playback technologies. Innovation in the computer hardware, storage, and software industries continue at a rapid pace.

The new technologies for mass storage of digital information abound, yet the technologies and methods for long term preservation of the vast and growing store of digital information lag far behind. Strategies, methods and technologies for long term

preservation being designed and developed today have yet to demonstrate the technological or economic feasibility of operating on a mass scale.

Another challenge is the absence of established standards, protocols and proven methods for preserving digital information. The crucial role of digital libraries and archives in ensuring value has taken a back seat to enhancing access to current and actively used materials. As a consequence, digital preservation remains largely experimental and replete with the risks associated with untested methods, and digital preservation requirements have not been factored into the architecture, resource allocation or planning for digital libraries.

The purpose of preservation is to ensure protection of information of enduring value for access by present and future generations. Libraries and archives have served as the central institutional focus for preservation, and both types of institutions include preservation as one of their core functions. In recent decades, many major libraries and archives have established formal preservation programmes for traditional materials which include regular allocation of resources for preservation, preventive measures to arrest deterioration of materials, remedial measures to restore the usability of selected materials, and the incorporation of preservation needs and requirements into overall programme planning. Digital Preservation raises challenges of a fundamentally different nature which are added to the problems of preserving traditional format materials. With few exceptions, digital library research has focused on architectures and systems for information organization and retrieval, presentation and visualization, and administration of intellectual property rights.

The critical role of digital libraries and archives in ensuring the future accessibility of information with enduring value has taken a back seat to enhancing access to current and actively used materials. As a consequence, digital preservation remains largely experimental and replete with the risks associated with untested methods; and digital preservation requirements have not been factored into the architecture, resource allocation, or planning for digital libraries.

4. Individual Property Right & Digital Preservation

Traditional materials are relatively stable and well established legal and organizational frameworks for preservation are in place. The right to publicly display a work is also an exclusive right of the copyright owner, as is the right to make an adaptation, known as a "derivate work". Hence our desire to keep digital information around for the future use runs smack into the exclusive rights of the copyright owner. A writer or information generator who thinks that by publishing his ideas in the print media it will be more useful for the public and also financially it will give him more benefits he may not interested to have his idea digitized. The information creator is the owner of the idea created and it is absolutely his desire do go for digitization or not.

The financial aspect is also an important aspect in the case of IPR. The writer or information generator may think that if at all he gives his ideas to be digitized than financially he will lose money because the information so digitized will be available to whole world freely and in return he will not get his reward for his ideas rather if he

will go for print mode he will get money from the publishers continuously for a longer period.

In the present time when every where the talk is about e-books, digital documents etc. the publication of printed material is growing day by day. The publishing trade of books is growing rapidly day by day, year by year not only in India but in the whole world also.

5. Preservation requirement

In order to preserve digital materials on a scale commensurate with mass storage capabilities and in formats that are accessible and usable, it is necessary to articulate some basic planning and resource allocation. There are two ways to examine digital preservation requirement: from the perspective of users of digital materials and from the view of libraries, archives, and other custodians who assume responsibility for their maintenance, preservation, and distribution.

Libraries and archives will not accomplish their preservation missions if they do not satisfy the requirements of their users by preserving materials in formats that enable the types of analyses that users wish to perform. At the same time, libraries and archives are unlikely to be able to satisfy al requirements of all potential users primarily due to resource constraints, priorities and lack of technical expertise.

By making explicit preservation requirements from both the users' and custodians' perspectives, libraries and archives will be better able to integrate digital preservation into overall planning and resource allocation. Networking and access to digital sources will change all dimensions the scholarly work process, including identifying sources, communicating with colleagues, interpreting and analyzing data, disseminating research findings, and teaching. If their projections are correct, digital preservation programmes must support a high degree of integration of source material into analytical processes by coupling research sources with the tools necessary to analyze them; by maintaining linkages between research results and the sources on which they are based; and by providing a means to incorporate primary sources into teaching. Users will seek documents that are easily retrieved and manipulated, transmittable, and transportable from a repository to the sites of research, presentation, and teaching.

Preserving digital materials in formats that are reliable and usable, however, will require long-term maintenance of structural characteristics, descriptive metadata, and display, computational, and analytical capabilities that are very demanding of both mass storage and software for retrieval and interpretation. Digital preservation requirements may be expressed differently by archives, libraries, and other types of repositories that are struggling to meet escalating user expectations with limited financial and technical resources. Storage
systems should be capable of handling digital information in a wide variety of formats, including text, data, graphics, video, and sound.

Digital storage is not only an alternative means for storing print formats because many types of digital objects do not have print equivalents and cannot be preserved in non-digital formats. Conversion from analog to digital formats and migration to new generations of technology will be rapid, accurate, and inexpensive enough to permit very large scale transfers of heterogeneous materials. To make

digital preservation affordable to the widest possible range of organizations and individuals, equipments, media, and maintenance costs must be modest.

6. Preservation Strategies

Most librarians and archivists have accepted the basic wisdom-for now at least-that digital preservation depends upon copying, not on the survival of the physical media. But copying also referred to as "refreshing" or "migration" is more complex than simply transferring a stream of bits from old to new media or from one generation of systems to the next. Current methods for preserving digital materials do not fully support achieving these objectives. When faced with the responsibility for preserving digital materials, archives and libraries face a series of complex and difficult choices. Probably the most commonly used preservation strategy is to transfer digital information from less stable magnetic and optical media by printing page images on paper or microfilm. It seems ironic that just as libraries and archives are discovering digital conversion as a cost-effective presentation method for certain deteriorating materials; much information that begins its life in electronic form is printed on paper or microfilm for safe, secure long-term storage.Paper and microfilm have the additional advantage of requiring no special hardware or software for retrieval or viewing. Perhaps this explains why in many digital conservation projects, the digital images serve as a complement to rather than a replacement for the original hard copy materials.

Another strategy for digital preservation is to preserve digital information in the simplest possible digital formats in order to minimize the requirements for sophisticated retrieval software. Digital information can be transferred across successive generations of technology in a "Software-independent" format as ASCII text files or as flat files with simple, uniform structures. Several data archives hold large collections of numerical data that were captured on punch cards in the 1950s or 1960s, migrated to two or three different magnetic tape formats, and now reside on optical media. As long as the preservation community lacks more robust and cost-effective migration strategies, printing to paper or film and preserving flat files will remain the methods of last resort for many institutions and for certain formats of digital information.Current methods fall far short of what is required to preserve digital materials. All current preservation methods involve trade-offs between what is desirable from the standpoint of functionality, dependability, and cost and what is possible and affordable with current technologies and methods. Consequently, most repositories are copying by employing interim and less than desirable strategies, if they are addressing digital preservation issues at all. For example, the simplicity and universality of printing to paper or microfilm come at the expense of great losses in the functionality of digital information.

Only a few libraries, archives, and other institutions have established digital preservation programmes, while most research and innovation comes from pilot projects and prototypes. Tested methods that have proven effective on a small scale in a limited number of repositories are not feasible for preservation of many of the types of digital materials that archives and libraries will confront in their preservation endeavors. There are four areas: storage media, migration, conversion, and

management tools. These four domains are often mutually dependent and ultimately must to be integrated into an infrastructure for digital preservation.

7. Storage media

The limited life of magnetic and optical media poses a significant problem, although this is not the primary limiting factor for digital preservation. Recent research on the longevity of magnetic media indicates a useful life span of 10 to 30 Years if they are handled and stored properly. Most authorities argue that enhanced media longevity is of little value because current media outlast the software and devices needed to retrieve recorded information. Optical media are susceptible to damage from high humidity, rapid and extreme temperature fluctuations, and contamination from airborne particulate matter. To prevent these problems, it is imperative to store magnetic and optical media under strict environmental controls that are not always available, affordable, or convenient. HD-ROM (High-Density Read-only Memory) is capable of storing 180 times more information then current CD-ROM costs.

8. Strategies for Digital Preservation

(i) Refreshing:-

The transfer of data between two types of the same storage medium is called Refreshing. In this system there are no alternate of data or bitrates changes. The data stored in a CD-ROM can be transferred to a new one is the example of the refreshing technique which may need to be combined with migration when such a situation exists were hardware or software required to read the data is no longer available. Due to the deteriorating nature of the physical media for information preservation refreshing technique is very much necessary.

(ii) Migration:-

Better methods for migration of digital materials to new generations of hardware and software are much needed for digital preservation regardless of breakthroughs in mass storage technologies. Planning for migration is difficult because there is limited experience with the types of migrations needed to maintain access to complex digital objects over extended periods of time. When a custodian assumes responsibility for preserving a digital object it may be difficult to predict when migration will be necessary, how much reformatting will be needed, and how much migration will cost. There are no reliable or comprehensive data on costs associated with migrations, either for specific technologies and formats or for particular collections and little research underway on methodologies that would reduce the costs and burdens of migration.

(iii) Conversion:-

Faster, cheaper and higher resolution conversion technologies are another critical element needed to make digital preservation feasible on a large scale. Most archivists and librarians accept the fact that we live in a hybrid environment where paper, microfilm, video, and magnetic and optical media need to interoperate in a more integrated and transparent manner. The vast majority of primary sources today still resides on paper and/or microfilm with little chance that we will see the mass conversion of existing archival and library holdings to digital formats. Efforts to capture and store descriptive mark-up on film for subsequent conversion are

hampered by unacceptable error rates in OCR technology and cumbersome conversion processes (Giguere).

(iv) Replication:-

Replication means creating duplicate copies of the preserved information. The duplicate copies of data or information on one or more systems done for preserving the data is done in this replication method. A single copy of data or information preserved at one place is highly risky and highly vulnerable in the case of software or hardware failure. The vulnerability may occur due to accident, environmental degradation, natural disaster, fire, flooding or terrorists bomb attacks etc. Hence the data so preserved in different places in different systems can be saved more easily than one place and in one system.

9. Development of Management tools :-

Dynamic digital objects, such as those found in hypertext systems, pose special management problems for both current and future retrieval and reuse. The boundaries of hypertext sources, like those found on the World Wide Web today, are difficult to ascertain because no single party or institution controls changes in the nodes and links that make hypertext objects live and highly responsive information resources. A high degree of volatility accompanies these objects because the contents of nodes change, the sites where information resources are stored change, and the links between nodes change, move and vanish.

Research and development of tools that would imbed more intelligence about the preservation status of digital material into the objects themselves would make monitoring and maintenance of large digital collections more automatic. Current methods for monitoring the physical status of digital materials are labor intensive, unreliable and potentially damaging to the materials themselves.Despite differences, some lessons from traditional preservation are transferable to the digital environment. In order to avoid commitments that far exceed available resources and costly rescue and restoration efforts, preservation must become an integral part of the planning, design and resource allocation for digital libraries and archives.

Planning for preservation must become an integral part of the design and management of digital libraries and archives. If left as an afterthought, there is little reason to believe that long-term preservation of digital information will not be any more affordable than preservation of conventional formats has been.

Conclusions:

Digital preservation raises challenges of a fundamentally different nature, which are added to the problems of preserving traditional format materials. Digital preservation means the planning, resource allocation and application of preservation methods and technologies necessary to ensure that digital information of continuing value remains accessible and useable to future users. Today, digital preservation strategies are shaped primarily by the requirements and constraints of established repositories which are seeking affordable and practical solutions and methods. In the future, user requirements for more robust and flexible tools for using and analyzing preserved digital resources must also be incorporated into research and development of digital preservation strategies and methods. The digital information communicating though information technology mode are now a days very much

under threat. All the countries are very much in trouble as the website of their countries and secret information is hacked and stolen by the hackers, which in turn pose a great security threat to the nations. Even the most powerful country like USA is not sure as to whether the information of Pentagon or white house can be saved from these information & technologies experts hackers that is why all the countries even India is going to have a full fledge department with cyber experts to tackle these type of crime. Hence in nut sell though the information & Communication has given us lot of facilities in all the filed of life but the problem of preserving the digital information is very much difficult.

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Library Management and Security with RFID System

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Abstract

Radio Frequency Identification (RFID) is a evolving as a major technology-enabled with many promising in library security system. It can capture data easier and quicker than barcodes. Radio Frequency Identification (RFID) is an automatic identification method, relying on storing and remotely retrieving data. Library is a growing organism it grows in size the problems associated with the maintenance and security of the documents grows. In this article, give details on the use of RFID in libraries and the products that are available. While there is some debate as to when and where RFID in libraries first began, it was first proposed in the late 1990s as a technology that would enhance workflow in the library setting.

Keywords: RFID, library security system.

Introduction

Information Technology has changed the way people carry out their day-to day operations. There was once a time when executives and decision makers scanned the horizon for the next big thing that would enable their companies to leap-frog the competition to help them capture market share, track and trace items and help speed up the business at every stage. New-age technologies like the internet, e-commerce, bar-code systems, smart chips, radiofrequency identification (RFID) have given them a solution and their application is helping enterprises and different sectors in various areas. Radio frequency identification (RFID) is a generic term that is used to describe a system that transmits the identity (in the form of a unique serial number) of an object or person wirelessly, using radio waves. It's grouped under the broad category of automatic identification technologies.

The RF in RFID stands for "radio frequency"; the "ID" means "identifier." The tag itself consists of a computer chip and an antenna, often printed on paper or some other flexible medium. The shortest metaphor is that RFID is like a barcode but is read with an electro-magnetic field rather than by a laser beam. The similarity ends there. RFID is an advanced technology compared to barcodes.[1] unlike ubiquitous UPC bar-code technology; RFID technology does not require contact or line of sight for communication. RFID data can be read through the human body, clothing and non-metallic materials.[2-3]

Components

A basic RFID system consists of three components[4]:

(1) Tag,
(2) Reader
(3) Application

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(1) Tag

It is also known as a transponder, the tag consists of an antenna and silicon chip encapsulated in glass or plastic. The tags contain a very small amount of information. Tags can be active, passive or semi-active.

An active tag contains some type of power source on the tag, whereas the passive tags rely on the radio signal sent by the reader for power. Most RFID applications today utilize passive tags because they are so much cheaper to manufacture.

Semi-active tags are not yet commercially available but will use a battery to run the microchip's circuitry but not to communicate with the reader. Semi-active tags rely on capacitive coupling and carbon ink for the antennas rather than the traditional inductive coupling and silver or aluminum antenna used in passive tags.[5]

(2) Readers

RFID readers or receivers are composed of a radio frequency module, a control unit and an antenna to interrogate electronic tags via radio frequency (RF) communication.

Readers in library RFID systems are used in the following eight ways (Boss, 2003)[6]:

1. Conversion station – Where library data is written to the tags
2. Staff workstation at circulation – Used to check-in and check-out materials
3. Patron self check-out station – Used to check-out books without staff assistance
4. Exit sensors – Verify that all books leaving the library have been checked out
5. Patron self check-in station – Used to check in books without staff assistance
6. Bookdrop reader – Checks in books when patrons drop them in the bookdrop
7. Sorter – Automated system for returning books to proper area of library
8. Portable reader – Hand-held reader for inventorying and verifying that items are shelved correctly.

(3) Application

Once the reader reads the tag, the information is passed on to an "application" that makes use of the information. Examples of applications and their uses fall into at least six categories: [7]

1. Access control (keyless entry)
2. Asset tracking (self check-in and self check-out)
3. Asset tagging and identification (inventory and shelving)
4. Authentication (counterfeit prevention)
5. Point-of-sale (POS) (FastTrak)
6. Supply chain management (SCM) (tracking of containers, pallets or individual items from manufacturer to retailer)

Purpose

The purpose of an RFID system is the following:

(1) To enable data to be transmitted by a portable device, called a tag, which is read by an RFID reader and processed according to the needs of a particular application.

(2) The data transmitted by the tag may provide identification or location information, or specifics about the product tagged, such as price, color, date of purchase, etc.

(3) RFID technology has been used by thousands of companies for a decade or more.

(4) RFID quickly gained attention because of its ability to track moving objects. As the technology is refined, more pervasive - and invasive - uses for RFID tags are in the works.[8]

Objective

RFID tags replace both the EM security strips and Barcode.
Simplify patron self check-out / check-in.
Ability to handle material without exception for video and audio tapes.
Radio Frequency anti-theft detection is innovative and safe.
High-speed inventory and identify items which are out of proper order.
Long-term development guarantee when using Open Standard.[9]

RFID Technology for Libraries

1. RFID (Radio Frequency IDentification) is the latest technology to be used in library theft detection systems. Unlike EM (Electro-Mechanical) and RF (Radio Frequency) systems, which have been used in libraries for decades, RFID-based systems move beyond security to become tracking systems that combine security with more efficient tracking of materials throughout the library, including easier and faster charge and discharge, inventorying, and materials handling.
2. RFID is a combination of radio-frequency-based technology and microchip technology. The information contained on microchips in the tags affixed to library materials is read using radio frequency technology regardless of item orientation or alignment (i.e., the technology does not require line-of-sight or a fixed plane to read tags as do traditional theft detection systems) and distance from the item is not a critical factor except in the case of extra-wide exit gates. The corridors at the building exit(s) can be as wide as four feet because the tags can be read at a distance of up to two feet by each of two parallel exit sensors.
3. The targets used in RFID systems can replace both EM or RF theft detection targets and barcodes.[10]

Advantages of RFID systems[11]

Rapid charging/discharging: The use of RFID reduces the amount of time required to perform circulation operations. The most significant time savings are attributable to the facts that information can be read from RFID tags much faster than from barcodes and that several items in a stack can be read at the same time. While initially unreliable, the anti-collision algorithm that allows an entire stack to be charged or discharged now appears to be working well. The other time savings realized by circulation staff are modest unless the RFID tags replace both the EM security strips or RF tags of older theft detection systems and the barcodes of the automated library system - i.e., the system is a comprehensive RFID system that combines RFID security and the tracking of materials throughout the library; or it is a hybrid system that uses EM for security and RFID for tracking, but handles both simultaneously with a single piece of equipment. There can be as much as a 50 percent increase in throughput. The timesavings are less for charging than for discharging because the time required for charging usually is extended by social interaction with patrons.

Simplified patron self-charging/discharging: For patrons using self-charging, there is a marked improvement because they do not have to carefully place materials within a designated template and they can charge several items at the same time. Patron self-discharging shifts that work from staff to patrons. Staff is relieved further when readers are installed in book-drops.

High reliability

1. The readers are highly reliable. RFID library systems claim an almost 100 percent detection rate using RFID tags.
2. There are fewer false alarms than with older technologies once an RFID system is properly tuned.
3. RFID systems encode the circulation status on the RFID tag. This is done by designating a bit as the "theft"(EAS) bit and turning it off at time of charge and on at time of discharge. If the material that has not been properly charged is taken past the exit sensors, an immediate alarm is triggered. Another option is to use both the "theft"(EAS) bit and the online interface to an automated library system, the first to signal an immediate alarm and the second to identify what has been taken.

High-speed inventorying

1. A unique advantage of RFID systems is their ability to scan books on the shelves without tipping them out or removing them. A hand-held inventory reader can be moved rapidly across a shelf of books to read all of the unique identification information. Using wireless technology, it is possible not only to update the inventory, but also to identify items which are out of proper order.

Automated materials handling

1. Another application of RFID technology is automated materials handling. This includes conveyer and sorting systems that can move library materials and sort them by category into separate bins or onto separate carts. This significantly reduces the amount of staff time required to ready materials for re-shelving.

Long tag life

1. Finally, RFID tags last longer than barcodes because nothing comes into contact with them. Most RFID vendors claim a minimum of 100,000 transactions before a tag may need to be replaced.

How Does RFID Work?

The RFID reader sends out electromagnetic waves in the RF (Radio Frequency) spectrum. When the tag enters the RF field, the tag's electronic circuits are powered by energy from the RF field. The tag then modulates the waves and the sends them back to the reader. The reader converts the signals received from the tag into digital data and sends it to the host computer. More specifically, the key RFID system components are described below:

An RFID tag consists of an integrated circuit (IC) attached to a tag antenna. The IC is the heart of the tag. The electronic circuits on the IC define the functionality and memory capability of the tag.

The tag antenna is a conductive structure specifically designed to couple or radiate electromagnetic energy. The shape and size of the antenna dictate the RF tag operating frequency and the read range of the desired system. The antenna is typically fashioned via electrochemical etching or deposition techniques or in some instances can be manufactured using conductive ink printing.

The base material of the tag is often polyester, PET, and other plastic films, but can also be paper substrates. RFID tags come in a multitude of form factors and packages. They are available in a variety of sizes, shapes, and degrees of rigidity, robustness, and flexibility to fit with the item it is intended to identify, along with the reader performances expected at each transaction stage. These include thermal transfer labels, plastic cards, key fobs, or encapsulated buttons. Tags can also be incorporated or even embedded into materials such as cardboard, plastic, wood, textiles, or the living tissues of animals or humans.

An RFID Reader Station is made up of an RFID reader and an antenna. It can read information stored in the RFID tag and also update this RFID tag with new information. It generally holds application software specifically designed for the required task. RFID stations may be mounted in arrays around transfer points in industrial processes to automatically track assets as they are moving through the process.

An RFID reader station can be fixed or handheld, and is usually connected tomanagement information system or host computer.

Reader antennas are available in a variety of shapes and sizes; they can be built into a door frame to receive tag data from persons or things passing through the door, or they can be mounted into EAS gates; embedded into desk tops and other furniture; orintegrated into conveyer or other materials-handling systems.

The electromagnetic field produced by an antenna can be constantly present when multiple tags are expected continually. If constant interrogation is not required, the field can be activated by a sensor device.

Readers may operate at different RF frequencies, and even within a single frequency they may still use different communication protocols. Air interface protocols are the rules that govern how tags and readers communicate.

Two common families of protocol are Reader Talks First (RTF) and Tag Talks First (TTF) protocols. For RTF systems the tags wait to be commanded to communicate data and signals by the reader. For TTF systems, tags send information continuously while in the RF field and powered up, without waiting for a specific command from the reader.[11]

RFID and Library Functions:

RFID can be linked to the barcode, which is an apt analogy. As an identifier, it is particularly suited to inventory functions, and a library has a strong inventory component. There is, however, a key difference to the library's inventory as compared to that of a warehouse or retail outlet. In the warehouse and retail supply chain, goods come in, and then they leave. Only occasionally do they return. The retail sector is

looking at RFID as a "throw-away" technology that gets an item to a customer and then is discarded. Yet the per item cost of including an RFID tag is much more than the cost of printing a barcode on a package. In libraries, items are taken out and returned many times. This makes the library function an even better use of RFID than in retail because the same RFID tag is re-used many times.[12]

Second only to circulation, libraries look to RFID as a security mechanism. The RFID tags can facilitate security in a variety of ways. In one method, the tag that is used has a special "security bit" that can be switched from "checked-in" to "checked-out." The exit gates at the library read each tag as the user passes out of the library and sounds an alarm if the bit is not in the "checked-out" state. The check-in function resets the bit. Another method is for the tags themselves to remain the same; as the user passes through the exit gate the system reads the tags in the books in the user's arms or bag and queries the library database to be sure that the items have been checked out.[13]

Although RFID can be used in technology. What libraries don't tell their users, and none of us should probably library anti-theft systems, this doesn't mean that it is a highly secure say very loudly, is that RFID tags can be shielded by a thick layer of Mylar, a few sheets of aluminum foil, or even an aluminum gum wrapper, so they won't be detected by the reading device. In addition, today's tags are not hidden in the spine of the book, like security tape, but are often found on the inside of the book cover, barely concealed by a library label, and can be removed. This is not a condemnation of the technology nor even a reason not to use it in the library security system; the reality is that library security has never provided more than a modicum of security for library items. The gates and their alarms are as much social deterrent as they are actual prevention. The reason to use RFID for security is not because it is especially good for it, but because it is no worse than other security technologies. There is, however, some potential savings because a single tag serves many different functions. The library saves some time in processing new items because it only has to affix one technology to the item. It may also save some money due to the integration of circulation and security with a single vendor and into a single system. Some future-positive thinkers in the library world see the potential to have a combined exit-gate/check-out station that allows patrons to walk about of the library with their books in hand and their library card in their pocket. That brings up other questions, especially privacy ones, but the notion is intriguing.[13]

As well as being an inventory technology, barcodes also serve the point of sale (or lending). The need to have a direct line of sight on the barcode makes it difficult, however, to perform functions on more than one item at a time. RFID systems can read multiple tags at once, allowing you to check out a stack of books with a single transaction. Barcodes also have some disadvantages when taking an inventory of the library. The line of sight requirement means that each book must be tipped out far enough to read the barcode if it is on an outside cover, or removed entirely from the shelf if the book or item must be opened to see the barcode. This is an area where RFID can provide great advantages because the tags can be read while the books sit on the shelf. Not only does the cost of doing an inventory of the library go down, the odds of actually completing regular inventories goes up. This is one of those areas where a new technology will allow the library to do more rather than just doing the

same functions with greater efficiency. Library experience with RFID is still in its early stages, but already some librarians are getting ideas for additional uses of this technology. RFID could be used to gather statistics on the re-shelving of books in the stacks area, by equipping shelvers with hand-held readers. Vendors of RFID systems for libraries are already offering automated sorting of returned books into a handful of bins that facilitate the re-shelving of books that are checked in. A fully automated library could potentially know exactly where an item is, down to the very book truck or bin, during the return process. In theory, a library could "know" when a book leaves the shelf, and could trace the progress of the book through the library to check-out. In reality, it is already possible to find a requested video in a jumbled browsing section that gets out of order due to high use.[14]

Conclusion

RFID tags can be read at a very fast speed, in most cases responding in less than 100milliseconds. Hence has a greater speed in operations for identification. This even helps in reducing inventory shortages. RFID system proves advantageous in interactive applications such as work-in-process or maintenance tracking because of its read/write property. They also provide availability of information in real time. Although RFID has its benefits, difficulties may arise due to its cost, privacy and security concerns. Libraries must be outspoken in their public education efforts related to RFID. Not only are libraries one of many industries who can benefit from the safe implementation of RFID systems, but also because RFID represents the start of a slippery slope to ever greater loss of control over our personal information.

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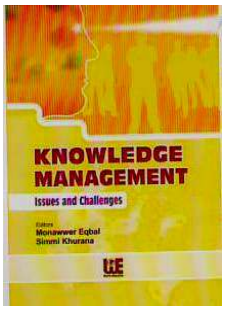
Book Review:



Dr. Monawwer Eqbal and Prof. Simmi Khurana (ed.) **"Knowledge Management: Issues and Challenges"**. World Education, 2012, Pages**,** Vii, 422, Price rs.995, **ISBN-**978-81-909873-2-5

The Book is address to all information professionals, such as Information Officers, Information Managers, IT and Management Professionals, Publishers, Authors, Educators, Students, Research Scholars, Content Managers; etc. It highlights how every profession requires shades of knowledge management. It emphasizes the importance of knowledge in wealth creation and stresses the uses of knowledge sharing. The book is broad enough to be considered an overview, and deep enough to be an insight. The complexity of the subject is made comprehensible with simple and straightforward language. The case studies cited are aimed at driving home psychology overtones of knowledge management in the corporate world. The technology support required for information and knowledge management is explained in non- technical language without compromising on facts.

The book is the result of a National Seminar on Knowledge Management: Issues and Challenges-2011. Generally, the excitement and synergy of an innovative Seminar does not translate as well into book form; however, this material is the exception to that. The stated purpose of that Seminar, translated into the purpose for this book, was to examine issues and challenges for knowledge management that allow for the creation and use of ICT. The concept of ICT may be less well known to readers than knowledge management; it denotes the actual content of a knowledge management system. The editors provide a conceptual model to organize the papers into a meaningful array. They provide rationale for beginning with "The role of public libraries towards a knowledge society" by A.W.V.Athukorala (Srilankan Author) and then having subsequent sections dealing with "Shifting the Traditional Pattern of Knowledge Retention: A case Study of Knowledge Garden concluding with "Knowledge Management in Indian Banking System :A Study" The papers and perspectives in these sections are necessarily broad. The editors included both theoretical and empirical papers. In fact, the editors purposely designed the book with an unusually broad perspective of topics, which adds to the appeal of this material.

The text draws on range of contributing disciplines including leadership, information communication technology, human resource management, business management and library management. It builds a framework, which integrates these fields of influence into a more comprehensive model of knowledge management. A particular feature of this book is the centrality of the knowledge workers to the various strategies, principles explored .Although systems, and processes are discussed. The human factors which affect the adoption or development of effective knowledge management are central to this discussion knowledge cannot be optimized if employees are not willing partners. This book is a handy resource for all students, researchers and practitioners in the knowledge-management field.

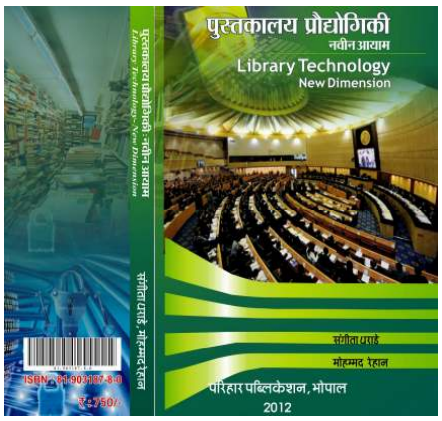
The topics of the chapters in the book include diverse topics such as Knowledge Management Towards Institutional Repositories, National Knowledge Network: An overview, Knowledge Management in civic Administration: A Prospective Step Towards K-Community, Issues and Challenges of copy Right in Digital Age: An Indian Perspective a method for introducing knowledge into the conceptual graphs with spreadsheets, human-based issues in implementation into a diverse user population, and the lessons learned about knowledge management strategies in Digital Environment.

In summary, although you could sit down and read this book, it is designed to use as well as read. It is clearly aimed at organizations that are fully committed to knowledge management; there is little discussion for example on how to handle situations where there is a mixture of positive and negative opinions about knowledge management. If you are looking for a practical approach for developing an action plan and getting started with knowledge management, then this book provides a wealth of techniques integrated through a Knowledge Management Process Framework, and supported by case studies and examples.

Reviewed by

Syed Ahtisham Raza Naqvi & Pushpendra Pratap Singh Sengar

धराडे, संगीता एव मोहम्मद रेहान **"पुस्तकालय प्रोद्योगिकी : नवीन आयाम"**. भोपाल, परिहार पब्लिशर, 2012, प्र. 124, मूल्य 750.00



पुस्तकालय प्रौद्योगिकी का जो वर्णन यहाँ प्रस्तुत किया गया है, वह हिन्दी प्रदेशों के पुस्तकालय एवं सूचना विज्ञान के छात्रों के लिए यह पुस्तक मील का पत्थर साहिब होगी। पुस्तकालयों में प्रौद्योगिकी आज व्यापक रूप से उपयोग की जा रही है। ग्रन्थालय एवं सूचन विज्ञान एक पूर्ण विषय का रूप ले चुका है तथा विश्व विद्यालयों में इस विषय का व्यापक अध्ययन, अध्यापन एवं शोंधकार्य निरन्तर किया जा रहा है। आज पुस्तकालय विज्ञान में सूचना प्रौद्योगिकी को एक अलग प्रश्न पत्र के रूप में पढाया जा रहा है। लेखक यूचना प्रौद्योगिकी के प्रत्येक पहल पर आवश्यक अध्ययन सामग्री उपलब्ध कराने का प्रयास किया है। ग्रन्थ को अनेक अध्यायो में बाटते हुए पुस्तकालय सूचना प्रौद्योगिकी से संबंधित अधिक से अधिक सामग्री प्रदान की है।

पुस्तक की भाषा शैली बडी स्वाभाविक व सरल है। लेखक ने चित्रों के माध्यम से विषय आसानी से समझाने का प्रयास किया है एवं अपने शैक्षणिक अनुभवों के आधार पर विषय के विभिन्न पहलुओं के बीच जो तारतस्प स्थापित किया है वह विषय को व्यापक रूप से समझने का अवसर प्रदार करेगी।

रवीन्द्र कुमार गुप्ता

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